A Geospatial Analysis of a Bangladeshi Insurgency

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Abstract of Thesis

A Geospatial Analysis of a Bangladeshi Insurgency

This thesis utilizes spatial and nonspatial statistics to identify where in Bangladesh recruits of the *Jamaat-ul Mujahideen fi Balad-al Bengal* (JMB) violent Islamist insurgent movement cluster and why they are from these areas. The study argues that the historical and geographic context of Bangladesh continues to play an important role in extremist violence in Bangladesh as evidenced by the JMB. Drawing upon a wide variety of studies, this thesis evaluates the applicability of the political, economic, demographic, human development and physical geographic on the local conflict environment.

Using a combination of spatial statistics, Moran's I and Getis-Ord GI*, and spatialized statistics, the Kruskal-Wallis and Mann-Whitney U tests, it finds that there are significant concentrations of JMB recruits originating in the northwestern region of Bangladesh and that there is a significant lack of recruits originating in the area south of Dhaka. Using a series of regression models, this study finds that distance to the capital district, Dhaka, is the most important explanatory variable for the different amounts of JMB recruits in the "hot spot" and "cold spot" clusters. The study notes that human development, as measured by the 1991-2001 growth rate in female literacy, is negatively correlated with JMB recruits and the best explanatory variable of differences in the numbers of JMB recruits in these two regions.

In addition to calling for additional research into other religious and ideological insurgencies in Bangladesh and elsewhere, this study argues that military counterinsurgency operations must include human development programs to be effective.

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Glossary of Terms

Belligerent: Belonging to or recognized as an organized military power protected by and subject to the laws of war (Merriam-Webster's Dictionary of Law, 1996)

BNP: Bangladesh Nationalist Party, center-right party led by Khaleda Zia typically in coalition with the JIB

JIB: Bangladesh *Jamaat-e-Islami* (Bangladesh Islamic Assembly), political party led by Matiur Rahman Nizami and espouses creation of a state based on Islamic law

JMB: *Jamaat-ul Mujahideen fi Balad-al Bengal* (Assembly of Holy Warriors in the land of Bengal), an Islamist insurgency

GIS: Geographic Information System

ICG: International Crisis Group. NGO.

Insurgency: A condition of revolt against a recognized government that does not reach the proportions of an organized revolutionary government and is not recognized as belligerency (Merriam Webster's Dictionary of Law, 1996)

Majlis-e Shura: Top decision-making body of the JMB

Ehsar: Full-time member of the JMB. Fund raisers, operators, recruiters, and managers

Gayeri ehsar: Part-time member of the JMB. Pay regular dues but are unable to leave work or families

GROW: Geographic research on war

Sudhi: Well-wisher/comrade of the JMB. Provide money, safe haven, and other items upon request

Chapter 1: Bangladesh, Extremism, and an Insurgency

People rarely engage in violence for the sake of it. In the *Utility of Force* General Rupert Smith (2005) argues that governments should refrain from employing force unless it is a calculated political decision to do so. For governments, the use of force, like diplomatic negotiations, is an accepted political activity. A common assumption of the modern international system is that legitimate governments have a monopoly on the use of force within their borders. However, it is clear that extra-governmental organizations also utilize violence in their range of activities. Some of these entities utilize violence in order to supplant the current government or state and replace it with one of its own design. Others utilize violence to maintain economic, rather than political, networks. Still others use force to impose a set of social norms that are different from those regulated by the government. Finally, some organizations may seek an outcome through force in all three spheres of activity.

While governments and organizations utilize force for a variety of reasons, people join these organizations for a variety of reasons as well. Identifying and explaining the reasons for "why men rebel" has been a longstanding debate within the academy. Perhaps an individual would join a cartel to share in the economic spoils of its black market business, or join an informal militia to police the neighborhood for social deviants, or join a guerrilla organization to change the state to one more amicable to his or her taste. Which is the most significant factor in explaining their recruitment, assuming that they joined the organization of their own will?

In general there is one critical difference between those who are authorized to use force by the state and those who are not: professionalization. The primary employers of force for the state are the military and police services, which are comprised of individuals who are often uniformed, trained, and dedicated to the profession (to a greater or lesser extent depending on what state you are discussing). On the other hand, those authorized to use force in the name of non-state actors are often, euphemistically, "part-time." Mao Tse-tung (1961, 73) acknowledged a variety of types of guerrilla units in his treatise *Yu Chi Chan* (Guerrilla Warfare) including units derived from the "masses of the people" to regular army units detailed for the purpose of guerrilla warfare. In terms of the former he admitted that "there is no profound difference between the farmer and the soldier. You must have courage. You simply leave your farms and become soldiers…when you take arms in hand, you become soldiers; when you are organized, you become military units." On the other hand, we should be careful not to overstate the importance of the farmer-soldier myth in the recruitment and training of guerrillas. Charles Esdaile (2004) debunks the almost ubiquitous assumption that a ragtag army of guerrillas defeated Napoleon in the early decades of the 19th century, rather than a combination of professional soldiers and peasants.[1]

Fortunately, others have brought the distinction between fulltime, "professional" guerrillas and insurgents and the ones who are co-opted or part-time. David Kilcullen (2009), in an examination of insurgencies in a variety of states, notes the presence of local "accidental guerrillas" who have been co-opted by more international-focused professional

[1] He attributes the pervasiveness of this belief in no small part to British and Spanish misinformation during that time. The British sought to play down Spanish contributions and the Spanish sought to promote a sense of national unity.

insurgents. Kilcullen (2009) argues that this cooperation is rooted in the insurgent organizations harnessing of the grievances of the locals, who then join the movement. Drawing on General Smith's (2005) understanding of "war amongst the people," one of Kilcullen's (2009) conclusions is that some insurgent groups are more effective at exploiting the grievances of local populations where they concentrate their activities than government or other state entities who must addressing these grievances. These insurgent groups, their potential recruits, and the grievances that link them all occur in geographic space. Because of their status as geographic phenomenon, the discipline of geography (specifically Geographic Research on War, GROW) has an important role to play in identifying spatial relationships and critical factors – not simply in the context of insurgencies but also for the states which the groups seek to topple.

My research seeks to answer two key questions:

(1) Is there a significant concentration of insurgent recruits at the sub-national scale and, if there is,

(2) What factors, political, economic, demographic, human development, or physical geographic, best explain this concentration in geographic space?

The *Jamaat-ul Mujahideen fi Balad-al Bengal*, which can be translated as the Assembly of Holy Warriors in the Land of Bengal, is the organization I am examining in this study. However, rather than look at the Bengal region as a whole I am seeking to understand the spatial concentration of the insurgency's recruits in the People's Republic of Bangladesh. The organization itself is a banned militant group that seeks to replace the democratic system currently in place in Bangladesh, since 1971, with a new state based on Islamic, or *shari'a*, law.

Geography and History of Bangladesh

Bangladesh is located in South Asia and borders India on its north, west, and east and Burma (Myanmar) in the southeast, to the south is the Bay of Bengal. As of 2012, the country is administered as seven provinces (called divisions), which are further divided into 64 districts or *zila* (See Figure 1.1). According to the Bangladesh Bureau of Statistics' (BBS) preliminary census results (2011), Dhaka division, which contains the capital, is home to almost 12 million people. There are over 140 million persons in the country who are primarily concentrated in the floodplains of the two main rivers, the Ganga/Padma and the Brahmaputra both of which flow into the country from India. Bangladesh is one part of the Bengal historical and cultural region, with the other areas being Arakan (now part of Burma/Myanmar) and the province of West Bengal (India). Bangladesh's population primarily claims Islam as its faith. About 94.8 million persons of the total population of over 106 million enumerated during the 1991 Census (about 90%) stated that they were Muslim (Human Rights Congress for Bangladesh Minorities of Dallas/Fort Worth 2006). The second largest religious group, those claiming to be Hindu, had a population of just over 11 million at that time (almost 10%). Incomplete data available for religious adherence gathered during the 2001 Census (BBS 2001) shows the population claiming to follow Islam growing to over 103 million, while those claiming to be Hindu fell to under 11 million. Riaz (2004) discusses the issue of the "missing millions" of Hindus since the country's independence in 1971.[2]

[2] Riaz (2004) ties the missing millions to his discussion of the development of Islamist politics in Bangladesh. Similarly, Hossain (2007) notes the targeting of the Hindu "other" by the discourse of political Islamists.

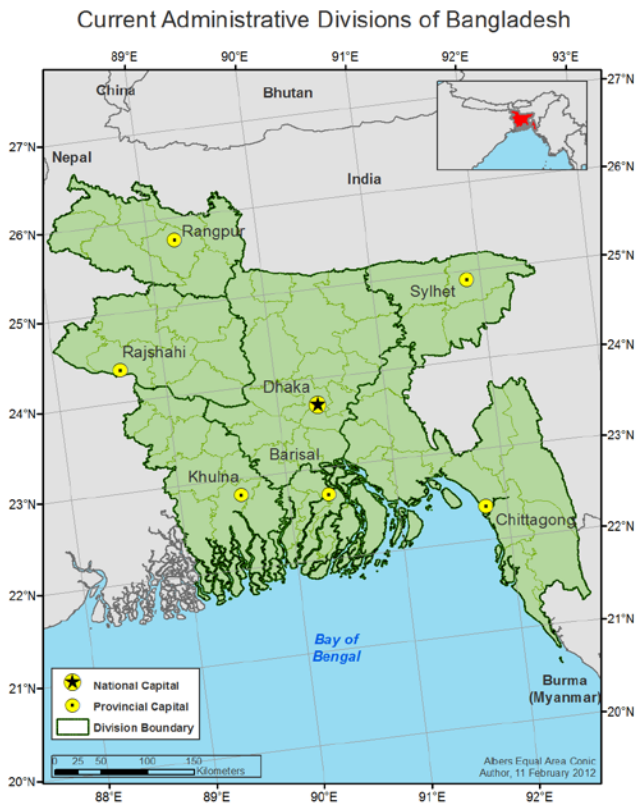

Figure 1.1 Administrative divisions of Bangladesh.

The country achieved independence in 1971 from Pakistan, which was a state created in 1947 by the partition of British India into India and Pakistan, with the two territories (East and West Pakistan) comprising the latter separated by over a thousand miles of Indian territory. The Bengal Boundary Commission award, which demarcated the border between (east) Pakistan and India, provided a number of non-Muslim majority areas to Pakistan and Muslim majority areas to India. In particular, Murshidabad and Nadia (Muslim majority) went to West Bengal (a province in India) due to the Indian National Congress' argument for controlling the Hooghly River system. On the other hand, the non-Muslim majority Khulna district went to East Bengal. Chatterji (1999) interpreted these administrative transfers of minority territories as a hostage situation for the affected communities. The demographic figures are telling, Chatterji (1999, 213) notes that 29% of

West Bengal's population would be Muslim, while 29.1% of East Bengal's population would be Hindu.

However, the 1947 partition wasn't the first time that the British had partitioned Bengal. Figure 1.2, from the *Historical Atlas of South Asia*, depicts the 1905 partition and 1912 reunification of Bengal province. While the text doesn't necessarily suggest that the British sought to create two distinct national territories with the partition, the pie charts accompanying the maps suggest this was the result. In 1905, 78% of West Bengal's population claimed to be non-Muslim, while over 58% of East Bengal and Assam claimed to be Muslim. Whatever the British intentions were, the affected communities had their own perceptions. Schwartzberg (1978, 217) observes that "educated Hindus saw in [the Viceroy, Lord] Curzon's scheme a partisan desire to create a Muslim majority province…to divide and weaken the politically active Hindu population." This led to condemnation of the partition by the INC (which was established in the 1880s), a general boycott of British goods, and "terrorist bombings in Bengal and elsewhere." This violent reaction to the 1905 partition by some Hindus, may have been one progenitor of the Muslim League, which was established in 1906 and held its first session in Dhaka, capital of the new East Bengal (and in 1971, Bangladesh).

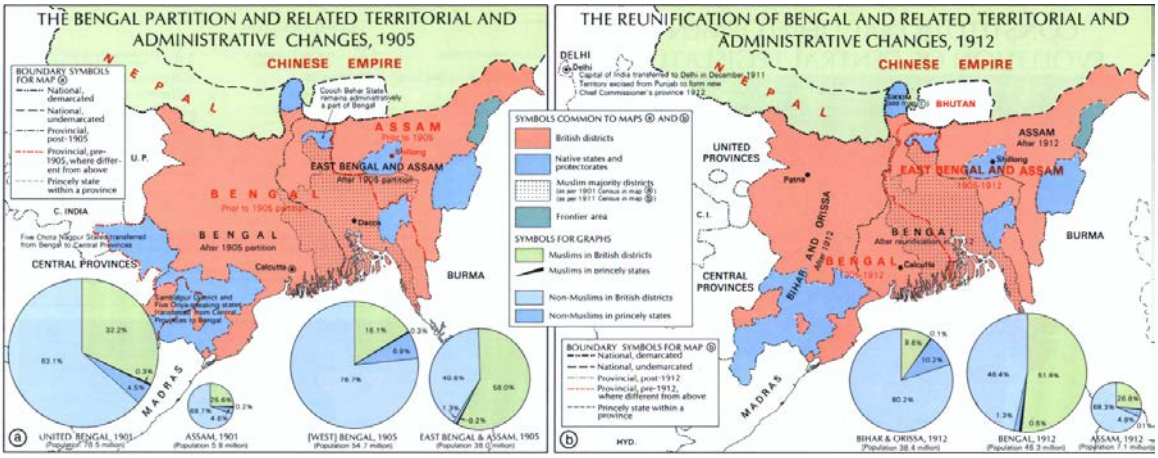

Figure 1.2 Bengal Partition and Reunification in 1905 and 1912.
(Source: Schwartzberg, 1971)

According to the *Atlas*, reasons for the partition included a rationalization of the political landscape to improve the administration of a province that had simply become too populous to govern. Additionally, the British sought to spur economic development in the "relatively isolated, and therefore neglected, eastern districts…[which were] cut-off by a maze of deltaic rivers from the economic growth of the region focusing on Calcutta" (Schwartzberg 1978, 217). This relative impoverishment foreshadowed independent Bangladesh's economic problems. In 1912, the British reunified Bengal on a linguistic basis, having the province of Bihar and Orissa (which predominantly spoke Bihari and Oriya, respectively) separated. As the pie chart shows, there was almost an even split between non-Muslims and Muslims in the province. Although the *Atlas* notes that there were somewhat more Muslims than Hindus, the Hindu community enjoyed overall greater economic and educational success. Thus, the reunification proved to be an "arrangement both groups proved able to live with until the approach of Indian and Pakistani independence" (Schwartzberg 1978, 217). Whether the British wanted to or not, the two partitions in 1905 and 1947 had the effects of politicizing one aspect of a person's identity

(religion), providing a territorial basis for that identity, and generating expectations on what that territory would include. During its union with Pakistan, East Pakistan began wrestling with a state identity crisis.

The fundamental question that East Pakistan, and now Bangladesh, attempted to answer is: Should this territory be for Bengalis (an ethno-linguistic group) who are primarily Muslim? Or is it a state for Muslims who reside in eastern Bengal? From 1947 to 1971, we may argue that the polity saw itself as the latter. In the initial aftermath of the 1971 independence struggle, it was likely the defined as a territory for Bengalis who were primarily Muslim. But since the early 1970s, the political discourse has reintroduced religion as one component of the state's political identity.

Between 1947 and 1971 the world knew East Bengal as East Pakistan, one part of a homeland for Muslims from the Indian subcontinent. Its existence was politically expedient. The departing British joined Bengali Muslims in eastern India with Punjabi and other Muslims in the west, separating them by thousands of miles of a non-Muslim majority India. The union worked for a time, until the "colonial" treatment by West Pakistan became intolerable (Hossain 2007). The crisis in Pakistan came to a head when Sheikh Mujibur Rahman (a Bengali) was elected prime minister of Pakistan; part of his platform was "autonomy and equal rights" for East Pakistan (Hossain 2007, 12). A coup prevented Rahman from taking his seat and spurred a Bengali independence movement that rallied behind him. Hossain (2007, 11-12) observes that Rahman "defined himself not primarily as a Muslim, but as a Bengali" and characterizes the struggle between West and East Pakistan as a struggle "for language, for culture, and for identity."

However the independence conflict was not merely between West and East Pakistan, in some ways it was also a civil war. Though we can most easily understand the conflict as a political struggle between "Bangladesh" and "Pakistan," it is important to note that there were still a significant number of Bengalis during the independence struggle who believed in a united Pakistan as a homeland for Muslims from the Indian subcontinent. Many Bengalis joined paramilitary militia organizations, the *al-Badr* and *Razakar* brigades being some of the more well-known. Hossain (2007, 13) points to Bengalis' anger "towards some of the symbolism and actors associated with the oppressors…in particular the clerics and Islamic militants who sided with the oppressors against the Bangladeshi population." Thus, the new Bangladeshi polity was far from unified in a vision for a state of Bangladesh based on a Bengali cultural rather than Pakistani religious identity.

The year 1971, when Bangladesh achieved its independence, was viewed as the beginning of a "secular-socialist" state. The first constitution, signed the following year, banned "the use of religion in politics" (Riaz 2004, 5). Then, Sheikh Mujibur Rahman began using Islamic expressions and symbolism in his speeches and writings and slowly the language of religion reentered the national discourse. Riaz (2004) attributes the usage of religion by Rahman to the end of his and his party's "ideological hegemony" over the people, which the Awami League had established during the independence movement. Subsequent coups and counter-coups from 1975 onwards further established religion as a political tool as dictatorships sought to establish their legitimacy based on an Islamic identity.

General Ziaur Rahman initiated a coup against the Awami League government led by Rahman in 1975. With the coup's success, and Sheikh Mujibur Rahman's death,

General Rahman sought to legitimatize his rule. One tool was the politically expedient use of Islam. The constitution was amended to remove "secularism" in the preamble and Article 8 and replace it with 'absolute trust and faith in the Almighty Allah' (Riaz 2004, 35). Other bureaucratic changes saw the formation of a religious education board, the promotion of religious education, and the cooptation of Islamic political parties (which had been banned after independence). Further, General Rahman's government also limited the territorial extent of the identity, changing the designation of the state's citizens from "Bangalee" to "Bangladeshi" (Riaz 2004, 34-37). General Rahman was subsequently killed during a failed coup attempt in 1980 and was succeeded by General Hussain Mohammed Ershad.

General Ershad also sought to legitimate his rule by appealing to the Islamic identity of Bangladesh. In 1982, he declared that Islam would form the basis of a new social system in the country and that the government would give it its proper constitutional place. In 1983, he declared that making Bangladesh an "Islamic country" was the goal of his activities. By 1988, the national discourse had embedded the politics of Islam to such a degree that General Ershad had Islam declared the state religion by constitutional amendment (Riaz 2004). Though Bangladesh has transitioned back to civilian political rule since 1991, with an interruption by a military-backed caretaker government in power from 2007-2008, the importance of Islam in the state's politics has only increased.

In addition to using Islam to establish ideological hegemony, Riaz notes that civilian political parties (as well as military dictators) utilize Islam for political convenience. In the elections of 1991, 1996, and 2001, Islamist political parties (a political party espousing belief in establishing a state governed by Islamic principles) and parties

increasingly Islamic in orientation played major roles as "king-makers." This is particularly true for the center-right Bangladesh Nationalist Party (BNP, established by General Ziaur Rahman), which was in a coalition government with the *Jamaat-e-Islami* (JIB) party[3] in 1991 and 2001. The now center-left party Awami League was in coalition with General Ershad's party (Jatiya Party) in 1996 and remains so as of the 2008 elections. According to Riaz (2004, 45), this perpetual courting of Islamist political parties "accorded them recognition as legitimate political actors and helped absolve them from their roles during the liberation struggle."

We can understand the colonial and post-colonial history of Bangladesh as the establishment of religion as an important political consideration (the 1905 partition and its reception), the bounding of a state using a religio-political boundary (the 1947 partition), and the (re)introduction of religion into the national discourse (post-independence politics). It is from this historical context of geographic and political instability that recent extremist violence associated with Islamists and Communists arose in Bangladesh.

Extremism in Bangladesh

Of course, violent extremism did not begin with the JMB. Shaykh Abdur Rahman, who was the insurgent's group leader until his execution in 2007, claimed in his confessional statement that his group was linked to the "Jamayat-ul Mujahideen" group that fought at the Battle of Balakot (in present day Pakistan), against a Sikh (a religious community prevalent in northwestern India) military force prior to 1850. However, Abdur Rahman only provides a detailed account of the JMB's leadership following the partition of the British Raj in 1947, at that time Amir Barkatullah (Afghani) was the emir of the "East

[3] For a discussion of the JIB's politics see Riaz (2004, 3 and 15).

Pakistan Jamayat-ul Mujahideen"(ICG 2006b, 3-4). Extremist violence in South Asia existed throughout British colonial rule, and may have predated it. I noted above that the 1905 partition of Bengal prompted what Schwartzberg (1978, 217) terms "terrorist bombings," although the link between these bombings and religious identity is not clear. By the time of the Bangladeshi revolution in 1971, links between extremist violence and religious identity become undeniable.

During the independence movement, when the definition of East Pakistan's state identity became a rallying cry for conflict, the emergence of violent groups was a natural outgrowth. While some Bengalis collaborated with the independence movement or took no sides, some joined the *Razakar* and *al Badr* militias which collaborated with the West Pakistani Army (Chaudhuri 1972). Since independence, some of the leaders of these militia groups have held public office, such as Motiur Rahman Nizami of the JIB political party, and have never accounted for their past roles (Hossain 2007).

The post-independence period has shown that ideology, in addition to religion, identity can spur organized extremist violence in Bangladesh. In addition, environmental factors, like the availability of arms, can increase the likelihood of violence. Riaz notes in the years following independence, Bangladesh's founder Sheikh Mujibur Rahman and his Awami League party lost much of their original support, particularly among students, the workers, and peasantry. In addition to these developments, Riaz notes the *Sorbohara* Party (Proletariat Party), an underground radical leftist group, also began operating around 1972. While the organization gained "considerable support in rural areas," it began a violent conflict with the state's police and paramilitary forces (Riaz 2004, 30-31). Importantly, the Sorboharas are still active and news detailing their extortion, kidnapping, and other violent

activities is occasionally released. Another movement of note is the Gono Bahini (the People's Army). Muhammad Yunus (2003, 96) famed founder of the Grameen Bank a Bangladesh-based micro-credit lending institution, discussed the presence of the "Marxist dissident movement [that] terrorized the countryside [of Tangail district]." Yunus notes that following independence Bangladesh was "awash with arms and ammunition left over from the War of Liberation." Undoubtedly, the JMB would also find the same arms and ammunition useful.

During their own insurgency, the JMB sought to gain the support of local people by eliminating the Sorbohara threat. Abdur Rahman's deputy, Siddiqul Islam (alias Bangla Bhai, executed), noted in his confessional statement that the JMB had learned of the Sorboharas activity during their own recruitment and fundraising drives in 2001, "*da'waa* receivers always pleaded with me that 'If you free the area of Sarbaharas, we will accept all your invitations.' That is when I started to motivate people to build up anti-Sarbahara social resistance. On April 1, 2004 we started our operation to annihilate 'Sarbahara' (left-wing extremists/Naxalites) in Rajshahi's Bagmara area" (ICG 2006c, 3). Thus, the JMB not only benefited from a long history of violent extremism, which could have made their activities more acceptable to a public acclimated to such behaviour, but probably benefited from the material and experience of revolution stemming from a struggle within many people's lifetime. Finally, the JMB could also swing local support to its cause through violent activities targeting groups that preyed on local communities, such as the Sorboharas.

Jamaat-ul Mujahideen fi Balad al-Bengal

Figure 1.3 Emblem of the JMB.

As the previous sections illustrated, the prominence of religion in Bangladeshi political discourse has increased in importance since independence and is linked with the chronic instability of the state's political identity and the continued existence of extremist violence. One political ideology with a vision for Bangladesh is Islamist. Islamism is not Islam, it is a political ideology based on Islam. The groups that are ideologically oriented towards Islamism include the JMB and the JIB, which represent the violent and democratic sides of the movement. In general, the movement seeks to replace the current, democratic Bangladeshi state with one based on Islam's religious law. Whereas some Islamist and other ideological groups, such as the JIB, work within the democratic system in order to effect the change they desire, others do not.

One such group is the JMB which coordinated the detonation of over 450 bombs over a span of 30 minutes, in 63 of Bangladesh's 64 districts, on 17 August 2005 (Daily Star 2005a). Over the next few years, the JMB would continue its violent struggle to overthrow the current political order for a state based on radical political Islamism. A number of scholars and organizations alleged that the JMB received political support from

Islamist political parties such as JIB and the center-right party, the Bangladesh Nationalist Party (Singh 2006).

Before examining the JMB in particular, it is necessary to build a context for its establishment. As Hossain (2007, 7) notes two events moved Islamism from a "marginal, rejectionist ideology embraced by a minority of utopia-inclined, disenchanted intellectuals" into the mainstream: the 1979 Iranian revolution and the *mujahideen* resistance to the Soviet Union's invasion of Afghanistan in 1980. Some Muslim (both Sunni and Shi'a) intellectuals viewed the Iranian revolution as the second stage of the Islamic world's revolution. The first removed the colonial powers and the second removed their proxies (Hossain 2007, 8). The resistance to the Soviet invasion is perhaps more important as it was "an incubator of armed Islamist movements…as well as a locus of the fusion and evolution of Islamist doctrines, tactics, and strategies" (Hossain 2007, 8). According to Hossain (2007, 8), the resistance had two effects; it allowed Islamists to declare victory over a non-Muslim country and it facilitated connections between various local groups from different areas of the globe.

Some intellectuals including the founder of the JIB, Abul Ala Maududi, bypassed sectarian divisions and accepted the Iranian Revolution as a learning experience for future Islamists (Hossain 2006).[4] This may partially explain JIB's willingness to support the JMB's violent activities; JIB may have viewed the militants as a useful tool to throw out the West's proxy, the currently ruling elites. For its part, the JMB's links with the Afghan resistance is unclear. According to the South Asia Terrorism Portal (2012), Osama bin

[4] *Jamaat-e-Islami* Bangladesh, is the Bangladesh branch of *Jamaat-e-Islami* which was formed in Pakistan prior to Bangladesh's independence (Hossain 2006).

Laden's International Islamic Front assisted another well known Bangladeshi violent Islamist organization, *Harkat-ul Jihad-al Islami* Bangladesh (HUJI-B). The site (SATP 2012) reports that a number of volunteers had traveled to Afghanistan to support the *mujahideen* against the Soviets. The JMB's former leader Abdur Rahman, who was executed in 2007, and other leaders of the organization were reportedly trained in Afghanistan but at unknown times (Singh 2006; SATP 2012b). In any case, Rahman formed the JMB in 1998, prior to the 11 September 2001 attacks on New York City and Washington, which rules out its formation in reaction to the U.S. invasion of Afghanistan. However considering that the Soviet invasion of Afghanistan ended in the late 1980s, it is conceivable that Rahman could have returned to Bangladesh and begun establishing the JMB.

The JMB has a singular focus, the subversion of popular democracy and imposition of Islamic *hukumat* (order), which is based on *shari'a*, Islamic law. In leaflets collected during the August 2005 bombings, the JMB asserted "the present democratic system [is] a creation of 'kafer' (infidels) producing two groups-the government and the opposition, dividing the nation" (Daily Star 2005b). The leaflets targeted each branch of government, the Parliament (legislative), the courts (judicial), and the police and army (executive). In addition, the leaflets outlined some of the key concerns for the organization including the destructive *hartal* system, the American occupation of Iraq and Afghanistan, and "anti-Islamic" activities of non-governmental organizations (NGOs) in Bangladesh (Daily Star

2005b).[5] While only discussing NGOs generally, Riaz elucidates the connection between the JMB and more general religious extremism.

> The NGOs posed challenges to local moneylenders by providing credit to the poor women, threatened the deep-seated patriarchy by making women visible, and made the traditional religious schools passé by opening new schools; yet the these [sic] *fatwas*, whether against individuals or organizations, were issued by mullahs. They became central to this battle [between Islamists and secular civil society], because the subtext of the actions was to provide a model of a society where mullahs reign supreme as the custodians of the moral order and where their authority is legitimated because it derives from their "knowledge" of "Islamic tradition." (2004, 82)

In addition to targeting state institutions, like the police or judiciary, the JMB could have targeted NGOs to garner support among distinct population groups, such as local moneylenders and religious leaders who were threatened by the changing environment.

That various actors engage in so-called "psychological operations" to influence the perceptions and loyalties of the local population is no surprise. Political parties hand out leaflets, conduct door-to-door surveys, and maintain youth and student wings to agitate among those age groups. The JMB's activities include *da'awa* and bombings and serve similar purposes. *Da'awa* is akin to proselytizing and seeks to obtain more converts and generate more understanding for the cause. Bangladeshi security forces arrested some JMB cadres, such as Abdul Sattar Molla, who had engaged in this type of activity before moving on to other, more violent, activities (ICG 2005a). The JMB's usage of leaflets in conjunction with symbolically bombing August 2005 illustrates the psychological impact that the organization sought. Despite this psychological impact, bombings, killings, and kidnapping also have a physical impact no matter how much loss of life is an organization

[5] A *hartal* is similar to a strike but much more widespread and violent. Political parties often call *hartals* to disrupt the economy and politics for various ends. Often *hartals* result in extensive work stoppages, property destruction, and death.

attempts to avoid. Indeed Moss (1971, 3), quoting a Brazilian insurgent, almost seems to be discussing JMB strategy,

> It is necessary to turn political crisis into armed conflict by performing violent actions that will force those in power to transform the political situation in the country into a military situation. That will alienate the masses who, from then on, will revolt against the army and the police and thus blame them for this state of things.

The usage of violence against the state in order to spark a mass uprising is the fundamental difference between the JIB political party and the JMB militant group. The JIB seeks to transform the state through domination of its own institutions, while the JMB seeks to supplant the entire state turning Bangladeshi against through fear and coercion. In the framework of General Smith (2005), the former is engaged in conflict amongst the people struggling with the Awami League and Bangladesh Nationalist Party to secure votes for leadership of the state, with the caveat that the JIB ultimately seeks to supplant it. On the other hand, the JMB seems to be in conflict with the people, struggling not only with the political parties but the supporters of the state whether judges, police officers, military personnel, or local citizens. Indeed, the JMB's targets have included all of these population groups and have included such places as movie theatres, cultural programs, and political rallies.

The successes of the Iranian Revolution and the *mujahideen*'s conflict against the Soviet Union may have inspired the JMB's organizers. In justifying their agitation for an Islamic state, the JMB attempted to gain legitimacy by highlighting the probable concerns of the average Bangladeshi Muslim. The August 2005 bombings were a sort of violent political theatre, not meant to be a mass casualty event (less than 100 people were injured or killed) but a proclamation of the group's existence. Put another way, the JMB probably

meant the August 2005 to influence several entities, such as the Bangladeshi people, the media, and the government. In keeping with General Smith's (2005, 280) paradigm, the JMB is fighting amongst the people.

Singh (2006) reports the JMB first organized in Palampur (Dhaka Division) in 1998. Palampur is located in Jamalpur district (Dhaka Division), since SATP reports that the JMB first organized in Jamalpur district in 1998 (SATP b). However, the government did not ban the group until February 2005, months before the August 2005 countrywide bombings but several years after the group's formation (SATP b). This timeline suggests that declaring the group illegal played a role using violence against the state. This corroborates Geographer Robert McColl's (1975) notion that violent political struggles begin to take place when a government declares a movement illegal. He wrote that the movement could choose to accept this outcome and disband or attempt to "maintain its viability through clandestine means" (McColl 1975, 302). Going underground implies the initiation of insurgency and guerrilla war.

In the leaflets distributed during the August bombings, the JMB argued that the bombings were the *third* warning to the government, the first two being peaceful activities. During these allegedly peaceful attempts to agitate for an Islamic state, JMB activists were arrested (Daily Star 2005b). Sometime between 1998 and February 2005, the JMB leadership likely made the decision to move their operations underground and turn violent. In going underground, the JMB entered the first phase of its insurgency. As the Bangladeshi security forces began arresting JMB personnel, it appeared that there could be a spatial pattern to their home districts, Figure 1.4, this study seeks to answer that question.

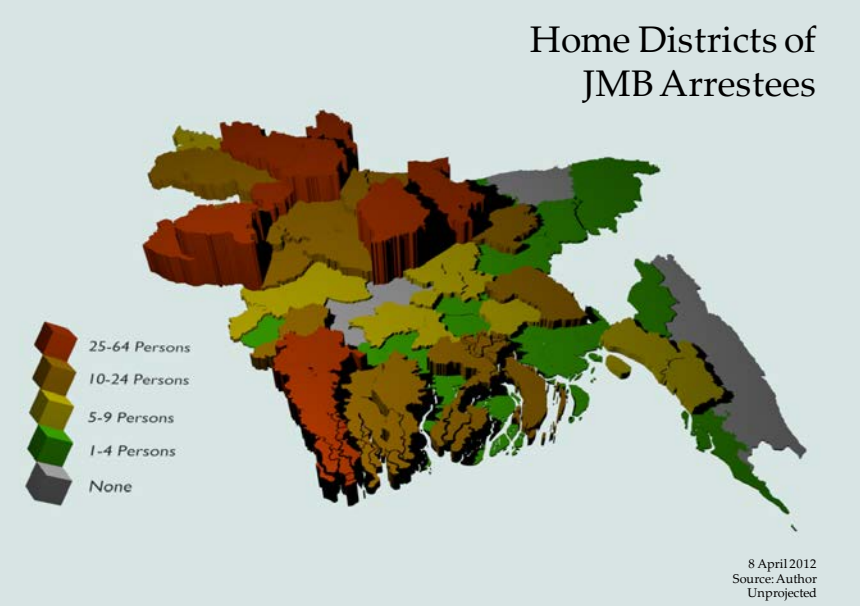

Figure 1.4 Home districts of the JMB arrestees.

The Study

I stated at the outset that my study seeks to answer two research questions. First, is there a spatial pattern and concentration to the recruitment of JMB insurgents in Bangladesh? Second, if there is a pattern and concentration, what factors within the immediate conflict environment are the most significant in explaining it? While ultimately an individual-level decision, I contend that the surrounding physical and cultural environment, which can be described using these factors, has some influence on the numbers and spatial concentration of JMB recruits in the country. I hypothesize that the Bangladeshi environment in which the JMB conflict is set explains the spatial concentration of that group's insurgent recruitment at a sub-national scale. In this study I conceptualized the local conflict environment as being comprised of five factors, political, economic, demographic, human development, and physical geographic. The first two factors, political and economic, encompass research highlighting political grievances and

economic greed as drivers of conflict. The demographic, human development, and physical geographic factors comprise other explanations of conflict, like youth bulge.

In my study I utilized two measurements for each factor. These measurements were derived from a review of other study's on conflict and insurgency. The implicit assumption is that the measurements I have chosen to represent each factor (such as number of votes for the political factor) are appropriate proxies for each concept. An additional assumption is that the JMB arrestees, who comprise my dependent variable, willingly joined the movement, rather than were coerced into it.

This study was conducted in two phases, the first phase answered my first key question and utilized geographic information systems (GIS) to identify statistically significant concentrations of JMB recruits. The second phase utilized statistical software to perform a multiple regression analysis of the five factors against the JMB recruits/arrestees. Both phases also drew upon existing knowledge to identify measurements that others used in similar circumstances and to provide additional context for my findings.

Chapter 2 lays out the literature review. I have organized it into several sections. First, I discuss the general theories motivating the selection of the factors noted above (i.e. political economic, demographic, human development, and physical geographic). In the subsequent sections I discuss each of these factors in turn, highlighting research into each factor and present the indicators that I have selected for the JMB in Bangladesh case.

The third chapter describes the data and methodological portion of the study and I discuss my 11 measurements of the five factors, the sources of the data, how I derived them, and the methods I used to analyze the data. As part of this discussion I detail some of the constraints that could affect the analysis that follows.

Chapter 4 details the results of the two phases of the analysis. It begins with a brief, general description of the data using basic statistics. This discussion flows into a more detailed discussion of the spatial statistics and spatially-driven statistics. Finally, I close with a number of multiple regression analyses.

The discussion chapter (Chapter 5) follows the analysis and provides a discussion on the importance of and implications of my findings, as well as other precedents from the literature. The chapter also includes a limitations section that provides a detailed presentation of the limits of my study.

Undertaking this study is important from both a theoretical and practical perspective. In terms of the former, this study combines methodologies from different studies to examine an aspect of conflict that is understudied (recruitment) and at a scope that is understudied (sub-state). Ultimately, this study advances our understanding of conflict and the context in which they begin and sustain themselves. More importantly, this research also has clear practical implications. For one, it presents a potential framework for evaluating other conflict environments in other geographies that yields an outcome that facilitates understanding of the conflict's underlying drivers. This is a significant development for the United States' and other countries' understanding of insurgency and how to most effectively deal with that type of conflict. This is particularly important given the United States' current engagement in counterinsurgency operations in Afghanistan, previously in Iraq, and possible future operations. The U.S. has acknowledged the importance of these operations in Field Manual 3-24 *Counterinsurgency,* finalized in December 2006. Generals Petraeus and Amos (2006) summarize new counterinsurgency (COIN) doctrine as "a mix offensive, defensive , and stability operations…[requiring] a

mix of familiar combat tasks and skills more often associated with nonmilitary agencies." In the context of Bangladesh, this framework could be used by the national government, international and nongovernmental organizations, and other states (such as the United States) to target policies and programs to mitigate any potential problems in the conflict environment or buttress developments that curtail conflict.

Chapter 2: Conceptualizing Insurgency and Recruitment

The most basic definition of insurgency is that it is one form of political conflict. Geographer Mary Gilmartin (in Gallaher 2009, 227) argues that conflict "results from the pursuit of incompatible goals by different people, groups or institutions" and distinguishes between violent and nonviolent conflict. Dalton (2006), citing Ian McAllister (1992), presents a four tier framework for understanding political behavior, specifically to measure protest activity. The first threshold is between conventional and "unconventional politics," but still within "accepted democratic norms." Dalton (2006) cites signing petitions and lawful demonstrations as part of this tier. The second threshold transitions to semi-legal direct activities, such as boycotts. A third threshold transitions to unlawful, but peaceful activities, such as occupying a building or hold an illegal protest. Finally, the fourth threshold encompasses violence (2006, 64-65). Within violent conflict, Gilmartin (2009) identifies three basic forms of violent conflict: (1) armed conflict, which scales from individuals to groups, (2) terrorism, and (3) wars. She further distinguishes different kinds of war, including inter-state wars (between states), civil wars (within states), and world wars (between blocs of states). Insurgency, then, fits into Dalton/McAllister's fourth tier as unsanctioned, violent political activity and Gilmartin's first form of violent conflict.

Geographers Lohman and Flint (2010, 1154), in "Geography of Insurgency," note that "geographers have consistently argued that conflicts, including insurgencies, are inherently geographic as they occur in particular places and across territorial space." Geographers Bernazzoli and Flint (2009, 393) categorize Geography's contribution to issues of "war, peace, militarism, and militarization" to three broad areas of study,

traditional military geography, spatial and geopolitical studies of conflict, and critical military geography. Palka and Galgano (2005) exemplify traditional military geography in their discussion of physical geography's myriad influences on military operations, such as streams during the American Civil War, medical geography during the Pacific campaigns of World War II, hazard analysis during stability and support operations (SASO), and geographical perspectives on military recruiting. Bernazzoli and Flint (2009, 393) note that this area of study is often criticized as being "too closely associated with the objectives and actions of the state." In contrast is critical military geography which purports to understand the undue influence that the military has on non-military life through politicized research. The seminal work in this area was conducted by Woodward (2004, 3) who discusses "how militarism and military activities create spaces, places, environments and landscapes with reference to a distinct moral order [and] militarism as the extension of military influence into economic, social, and political life." Finally, studies of the geography of conflict analyze and explain the geographic nuances of conflict and violence from a variety of scales, from the international to the local, from the violent terminus of conflict to explanations of its persistence. This is echoed by Lohman and Flint (2010) in their discussion of the "spatial analyses of conflict," which built upon traditional statistical methods by adding a discrete spatial element such as distance or location. Buhaug and Gates (2002) conducted the "first systematic" analysis of conflict utilizing a dataset spanning 1946 to 2000. Utilizing statistical analysis they discussed the importance of geography in explaining the scope and location of conflict. In my research, I draw principally on similar studies within the sub-discipline of spatial analyses of conflict and see my research fitting in with this group. While Buhaug and Gates focused on civil war in

general, this research utilizes a geographic framework to examine one aspect of them, namely, insurgency.

Geography, with its emphasis on space and the interaction between people and their environment, is one framework to examine a conflict environment and ascertain which factors influence the recruitment of insurgents. While not discussing insurgency specifically, Gallaher's (2009, 248) discussion of terrorism is relevant to insurgency since both utilize violence to obtain an acceptable outcome for the group engaging it. She points out that these outcomes can be rooted in "ideology, religious conviction, or world view." Importantly, users of violence for political objectives can include non-state actors (like the JMB), individuals, and states (labeled state terrorism). Gallaher (2009) identified three types of geographic studies on terrorism. One utilizes a framework of political economy and examines the factors that influence violence, such as resource scarcity, governments incapable to providing resources, and modernity. Another approach uses a geopolitical framework and focuses on how states define terrorism and respond to it based on these definitions. Finally, empirical geographic analysis makes up another type. This includes analyses of location or terrorism as a hazard. Gallaher (2009) includes McColl (1969), who discussed insurgency, as an example of an empirical study of terrorism. McColl (1969, 616) argued that the "fundamental purpose of a national revolution [is] to gain control of the people and territory of the entire state."

Buhaug and Rod (2006; c.f. Kalyvas 2006) observe that in every decade since World War II, there have been more civil wars than interstate conflicts and there has been an increase in the number of studies focused on civil wars in the post- World War II era. Stathis Kalyvas (2006, 17-18) defines civil war as "armed conflict within the boundaries of

a recognized sovereign entity between parties subject to a common authority at the outset of the hostilities" and which occurs following "the effective breakdown of the monopoly of violence by way of armed internal challenge." Though largely similar in form, Michael Brown (2005, 212) added an important temporal dimension to civil wars in that internal conflicts must be "sustained over time" to be called civil wars. For Brown this distinction amounts to wars lasting more than a few hours or days, in comparison to shorter violent conflicts like riots. Both riots (and protests and demonstrations for that matter) and civil wars are manifestations of internal conflict but the latter lasts longer and is more violent. Brown (2005) notes that a conflict can be termed a "war" after 1,000 deaths, but adds the temporal dimension and the necessity of a group identity to more effectively delimit war. Both of Kalyvas' concepts inform our understanding of insurgency as it flows from the breakdown of the state's monopoly on violence and occurs between parties under a common authority. Drawing on Brown's acknowledgement of time, I conceptualize insurgency as being part of the civil war process-occurring specifically in the earlier stages. Geographer Robert McColl in 1969 conceptualized insurgencies as having three stages and hypothesized that the movements progressed or regressed through the stages based on their military and political success. Initially the insurgents are in a mobile war stage, continually in motion and seeking the creation of a liberated guerrilla area - a geographic base. In the second stage, the insurgents conduct a guerrilla war from fixed bases, or "core areas." These areas not only act as political and military headquarters but also provide supplies and a point of diffusion of political ideas and influence. The final stage is one of equilibrium, where the insurgents create a parallel "insurgent state," where the insurgents have exerted control over a wider territory and larger population and have so gained a measure of

legitimacy among the population. In addition, the insurgents have the ability to contest, and defeat, government forces in "open battle." The implication of the McColl's third stage of insurgency is the beginning of civil war. Lohman and Flint (2010, 1159) note that McColl's study is noteworthy because of his identification of insurgency as a "*spatial process* [original emphasis] occurring in space and time."

According to Merriam-Webster's Dictionary of Law (1996), an insurgency is "a condition of revolt against a recognized government that does not reach the proportions of an organized revolutionary government and is not recognized as belligerency," a definition which follows from Kalyvas' definition. However Kalyvas (2006) may argue that insurgency may be an additional euphemism for civil war since the word "civil war" can add or deny legitimacy to the belligerents. In this case, a legitimate government may regard and publicly claim that the opposition is "merely" in insurgency, rather than engaged in civil war. However, the key distinguishing factor between civil war and insurgency is territoriality. As Kalyvas (2006, 17) notes civil wars' "key intuition is the violent physical division of the sovereign entity into rival armed camps." Insurgencies, on the other hand, are not seeking a division per se but the replacement of the government. In this way, insurgency is similar to revolutionary conflicts.

A revolutionary movement and insurgent movement share distinct similarities, a couple of the most basic are the replacement of the recognized government and the initial stage of seeking a geographic base. However, referring to the definition provided previously there is one key difference, an insurgent group is not recognized as a belligerent. While the ambiguity in who is doing the recognizing is troubling, at the very least it relates to either the recognized government or the international community. A recent example of

this distinction is the so-called "Arab Spring" unrest, which began in late 2010 in Tunisia but soon spread elsewhere. On 16 February 2011, violent protests against the regime of Muammar al-Qaddafi in Libya began and over the following weeks fighting intensified (Cowell 2011). During this time, the media presented the conflict as pitting the Libyan "people" against the regime in power. The insurgency, conceptually at least, reached the status of an organized revolution by March 6 when the Transitional National Council met in the city of Benghazi (a newly "liberated" city) and declared itself the "sole representative all over Libya" (News.Com.Au 2011). Like the Transition National Council prior to its recognition by other foreign governments, the *Jamaat-ul Mujahideen fi Balad al-Bengal* (JMB) is currently an insurgency, rather than a revolutionary movement. The *shura* of the JMB, which provides leadership to the organization, is not a recognized body (nor does it purport itself to be a recognized entity) by the international community or by Bangladeshis.

The Libya definition presents another important concept, that we should view conflict, including insurgency, along a continuum rather than as discrete, mutually exclusive activities. Ted Gurr is one early proponent of this attitude and warns that hardening the activities into exclusive concepts risks "over[looking] fundamental similarities" (Gurr 1968; 246). Thus while my research focuses on the JMB insurgency in Bangladesh, the processes discussed and the results of my analysis would have some validity in describing the movement's recruitment in a different phase, such as during revolution or civil war. Though the JMB is currently at the point of best being classified as an insurgency, it is likely that should it control enough territory it would setup its own "revolutionary government." However, whether the international community would recognize a JMB-led revolutionary government is outside the scope of this work. The JMB

is somewhere between the first and second stages of McColl's model and was on its way to the third stage until the Bangladeshi government began a concerted effort to dismantle it following country-wide bombings in August, 2005.

One missing piece in McColl's hypothesis is how internal conflicts begin. Lohman and Flint (2010) discuss Moss's (1971) four phases of insurgency. The first is the propaganda and preparation phase. The remaining phases are terrorism, guerrilla warfare and open insurgency. My research examines one of these processes in the first phase, the recruitment of combatants, specifically insurgents. Other processes we can include in a non-exhaustive list are the selection of targets, not only for violent purposes, but relatively more benign information or disinformation campaigns, the movement of combatants and non-combatants, training, equipment procurement, financing, and the provision of services. Importantly, all parties in a conflict take part in these processes to a greater or lesser extent. There is a variety of perspectives, from which we can examine these processes, and it is to this that we now turn.

Scholars and practitioners examine conflicts, including their causes and processes, from a variety of different perspectives. Greg Cashman (1993), in his expansive review of (international) conflict theory, discusses theories at a variety of scales from the individual level through the governmental level, the state level, and finally, the international level, while Jack Levy (2005) integrates these various levels into a single analytic framework, ranging from the international, to the societal, to the individual level, to explain the causes of international conflicts. Despite this difference in scope, we can extract key concepts from international conflict to build a framework of internal conflict. Three broad groups of theories dominate the systemic (or international) level of conflict. One is the *balance of*

power theory. In 2003, Henry Nau based balance of power politics on "national rather than common interests," and noted that international alliances were flexible and temporary agreements that sought to maintain equilibrium among states' power (Nau 2003, 133). Earlier, Nau provided a basis for insurgency in the discussion of balance of power, he noted that states do not solely derive power from material (such as ships and tanks) since "material power is inert." Rather, states derive power from their people,

> This issue of legitimate power essentially defines the nation. When the people no longer accept the authority of their government to use force legitimately, they take up arms against their own government or refuse to fight other countries to defend that government. (Nau 2001, 583)

Thus, insurgency is a symptom of governments' losing its legitimate authority to exercise power over a geographic space and its people. Nau describes the need for a concept of relative national identity since "countries differ domestically in terms of the political, cultural and historical factors that motivate them to accumulate and use power. These factors legitimate the use of power and lead people to support or oppose a particular national government" (Nau 2001, 582). In the introductory chapter I described how the identity of the Bangladeshi state and its relative national identity has been in flux since its independence in 1971. This confused relative national identity fosters a general environment amenable to insurgency as some people in certain areas find cause to reject the legitimacy of the state's authority.

A related theory is *power transition theory*, which finds that war erupts during times of the changing power relations between groups; this has clear applicability to a study of insurgency's beginnings (Levy 2005; Enterline 1998). One could argue a link between this and the concept of relative national identity that Nau proposes. In the case of

Bangladesh, the oscillation between two primary identities by the state empowers different population and political groups. This promotes a conflict-prone environment. A third theory with applicability to both international conflict and internal conflict is *liberal theory*. Moravcsik (1997, 517), discussing a liberal international relations theory, noted that it had three underlying assumptions. First, it rests on the assumption of primacy among societal actors. In terms of conflict, he argues that "deep, irreconcilable differences in beliefs about the provision of public goods, such as borders, culture, fundamental political institutions, and local social practices, promote conflict, whereas complementary beliefs promote harmony and cooperation." The second assumption concerns representation and state preferences. For Moravcsik, liberals assume that in the realm of domestic politics, the state is not an actor but a representative organization that competing, or cooperating, groups can capture or reconstitute. The final assumption, related to the international relations aspect of his paper, is that liberal theory assumes that the interaction of various states' preferences determines their behavior (Moravcsik 1997). Bangladesh and the JMB provide evidence for this theory, for instance the JMB seeks to capture and reconstitute the Bangladeshi state. As I discussed in the introduction, this conflict is partly due to disagreements over the basis for the state. A corollary of liberal theory is the democratic theory of peace with its arguably most famous proponent being Francis Fukuyama (1989, 2) who asked "have we reached the end of history?" since we had reached "the end point of mankind's ideological evolution and the universalization of Western liberal democracy as the final form of human government." Enterline (1998, 825) provides a later argument for this theory when he finds that as the average degree of democracy in a new regime's neighboring countries rises "the rate at which new regimes are the targets of militarized disputes decreases." A potential

parallel to insurgency is that it occurs within areas where non-democratic practices or poor economic performance is concentrated. Examples of analysis at the systemic level include the impact of military technology (Kemp 2005), globalization (Guehenno 2005), and transnational criminal enterprises (Williams 2005).

Levy (2005) identifies various tenets of democracy as the fundamental drivers of the various societal level models of why states go to war. He finds that there are three models, the democratic culture and norms, institutional constraints, and the signaling (or transparency) model. Basically, these models suggest that various hallmarks of democracy, checks and balances or public support, limit a state's ability to wage interstate war. For the purpose of elucidating the causes of insurgency though, these models are unsatisfactory. Arjona and Kalyvas (2008) however, present three perspectives related to the societal (or group) level analysis that explain the likelihood of why an individual may join an insurgent group. These are *state capacity*, *community structure*, and *sovereignty*. State capacity theory argues that conditions favorable to an insurgency, such as low state capacity and "rough terrain," foster expanded recruitment for an insurgency. I disagree with Arjona and Kalyvas prescribing topographic conditions within the state capacity theory. Topography affects much more than a state's ability to project power. Hence I include it as a separate group of theories focused on the environment-level (below). Community structure theory argues that cohesive communities are more able to ensure participation in armed groups than weaker communities. The sovereignty hypothesis hinges on the argument that "territorial control generates collaboration and, by implication, recruitment" (Arjona 2008, 12). Arjona noted that control leads to seven mechanisms that promote recruitment including: the use of selective violence by the occupying group to eliminate, coerce, and

co-opt enemies and the populace, the lowering of the "costs of collaboration" by removing competing claims to sovereignty, the establishment of legitimacy which promotes recruitment, credibility with the local populace that substantiates the group's claims, the distribution of benefits and services to the populace to win their loyalty, the ability to directly monitor and control the populace, and the establishment of a self-enforcing cycle where other claimants to legitimacy (such as the government) target the local populace for supporting the group thereby ensuring their continued loyalty to the group.

Focusing on the recruiting process for insurgencies and counterinsurgencies, Arjona and Kalyvas (2008) distinguish two broad levels of analysis, focusing on the individual-level and the group-level. Perhaps the best example of inquiry at the individual level comes from Ted Gurr (1968) who sought to answer "why men rebel" and theorized a psychology-based framework to explain individual choices to rebel. The so-called nature versus nurture debate is used here as the fundamental distinction at the individual level of analysis. The simplified argument of the former, relying primarily on biology, is that humanity has innate aggression that periodically explodes into violence. On the other hand, nurturists argued that violence and aggression are culturally derived, learned behaviors (Cashman 1993). While at first glance this debate doesn't seem to resonate with the question of recruitment of insurgents, it fundamentally affects the process. According to the naturist argument, we may expect that the recruitment process is a matter of timing; of when the innately aggressive and violent individual is ready to fight or train for fighting. If we assume that aggression and violence are learned behaviors, one's recruitment into a violent movement becomes a decision-making process. Today, many scholars identify the primary theoretical debate within the conflict discipline as between economists and political scientists, or

motivations between (political) grievances and (economic) greed (Collier 2001; c.f. Murshed 2005; O'Loughlin 2010). Arjona and Kalyvas (2008) addressed this dichotomy in their study of insurgent and counterinsurgent recruitment through motivations based on *grievances*, *greed*, and *non-material selective incentives*. According to grievance theory, a set of factors promote a sense of grievance among individuals and motivate them to join an armed group in order to bring about change. Greed theory maintains that individuals join armed groups if there are direct material benefits to doing so. Arjona and Kalyvas (2008) tested the security aspect of the non-material incentives; a theory that implies that individuals may join armed groups for benefits beyond economic or monetary gain. Psychology has also examined the causes of conflict notably through Ted Gurr (1968, 252-253) who, starting from a basic psychological theory of frustration causing aggression, hypothesized that one key component in the process of determining the likelihood of civil violence is *relative deprivation*. He defined this as, "actors' perception of discrepancy between their *value expectations* [original emphasis] and their environment's apparent *value capabilities* [original emphasis]." Hirschleifer (1995, 2001 quoted in Collier 2001, 3) presents a similar perspective, noting that possible causes of conflict relate to the *preferences*, *opportunities*, and *perceptions* endogenous to the combatants. In other words, a perceived gap between what an individual feels he deserves and what he actually obtains leads to anger, which is then manifested as aggression. However, the individual level perspective does not fully account for insurgency and by extension, recruitment of individuals to become insurgents.

With this research I build upon the third perspective, that of the *conflict environment*. Unlike the individual level that focuses on individual decisions or the group

level, which examines the organizations involved in conflict, this proposed perspective analyzes a variety of the environment's aspects in order to uncover what may influence the belligerents, and the conflict, in one way or another. This idea builds on McColl's 1969 paper that implicitly hypothesizes that there are appropriate environments for running and sustaining insurgency. In this research, I will examine the various theories associated with the individual, group, and environment levels of analysis and leverage them in analyzing the JMB insurgent movement.

O'Loughlin and Witmer (2010) add what one may call an environment-level group, which examines salient factors in the physical geography and cultural/human geography of conflict areas. O'Loughlin and Witmer (2010) identified hypotheses of areas where targets and bases (of both government and rebel forces), tree cover, and complex terrain are positively associated with civil wars. Buhaug and Lujala (2005) in their analysis of civil wars also stress the existence of natural resources, such as diamonds, and the role of physical distance, such as between the conflict and the political capital or a border, in setting the stage for insurgencies. In addition to physical distance, Hegre and Raleigh (2007, 6) also add social distance between groups, this contends that "geographic peripherality is often linked with ethnic and political peripherality" (c.f. Gates 2002 for an earlier discussion). Hegre and Raleigh (2007) identify demographic factors such as the composition of a country's population and a theory of "per-capita conflict propensity," which implies that areas with large populations are more at-risk of conflict than less populated areas. Additionally, Hegre and Raleigh (2007, 8) discuss the hypothesis of population concentrations, which argues that conflict increases as populations begin to concentrate; naturally, if "geographic concentration of dissidents increases, collective

dissent should also increase." In this study, I examine some of these theories and their aspects at the environment level group and explore the nexus between geography and insurgent recruitment.

If a group undertakes insurgency in order to replace an existing government that other governments recognize as legitimate, then it ultimately succeeds when a new government supplants the old, and establishes control over the territory and people. McColl (1975, 307) theorized various types of geographical organization for insurgencies. First, areas inhabited by a dense, ethnically homogenous rural population lend themselves to a rural mass base, similar to a soviet. Where insurgent access to population groups is minimal, insurgents organize at a *foco,* a base in a rural or urban area. The objective in this case is not to organize "existing revolutionary fervor" but to "become a focus for generating a revolution." Finally, when the official government's presence inside an entire region has been withdrawn or forced into retreat, the insurgent group can establish a liberated area. In discussing the importance of controlling territory (and the populations and resources within), McColl (1975) highlights the "*wei-ch'i* tradition" in East Asian military and political strategy which views "control of space as a major form of political power or legitimacy." [6] Despite these hypotheses, McColl did not conduct a rigorous empirical study to validate them and some scholars (such as O'Loughlin 2010) have noted a distinct lack of geography's contribution to the study of conflict. This research adds to other studies that have explored the spatiality of insurgency, however, it proposes to examine this phenomenon at a different phase, recruitment, and scale, sub-nationally, of a conflict.

[6] Wei-ch'i refers to a board game, which is also called *go* in Japan and *baduk* in Korea.

Just as Buhaug and Rod (2006) conclude that researchers should conduct studies of conflicts with different objectives separately (controlling territory or controlling government), I argue that the research should also take into account the geographies that differ with the phases of conflict. Studies of conflict, such as Buhaug and Rod, typically view conflict from the point view of its violent resolution, characterized by killings, bombings, and battles (c.f. Mustafa 2010). O'Loughlin and Witmer (2010, 181) describe an environment-level examination of this phase in pointing out that a number of studies have related the "ratio of violence to the economic and demographic characteristics of the districts, hypothesizing that specific economic and ethnic attributes will raise the potential for violence." The point of departure for this study is that rather than relating the ratio of violence to these characteristics, I hypothesize that certain attributes raise the likelihood of recruitment. This is similar in perspective to McColl, who hypothesized there may be a geographic calculation into the establishment of bases for training. Just as there are certain factors which make one site more suitable for a base than others, I hypothesize that certain political, economic, demographic, human development, and physical factors, which ultimately comprise the physical and cultural geography of a conflict, make some areas more conducive to the recruitment of potential insurgents. This is not a large theoretical leap. Ted Gurr (1968, 254) acknowledged that "whether empirical research ought to focus on conditions defined as collectively frustrating or directly on perceived deprivation is an operational question whose answer depends on the researcher's interest and resources." Michael Brown (2005) also identifies many of these factors within his framework of structural, political, economic/social, and cultural/perceptual factors. With reference to

these studies, this research focuses on conditions in the conflict environment (an expansion on Brown's framework) that may "collectively frustrate" (as noted by Gurr).

This study also acknowledges the importance of scale. Rather than examine recruitment internationally, this study joins with Arjona and Kalyvas' work (2009; c.f. Pasquale 2009) and others, in addressing the relative dearth of studies focused at the intra-country scale. Buhaug and Lujala (2005, 400) notes "our overview of the empirical literature shows that most studies ignore *local conditions* [emphasis added] and instead use country aggregates in analysis" and Buhaug and Rod (2006, 403) subsequently points out that civil conflicts which "are by definition sub-national events, and the fighting rarely spans entire countries." Similarly, O'Loughlin and Witmer (210, 180) identify a lack of research into specific geographical aspects as the discipline "still suffers from a weak conception of possible *environmental effects* [emphasis added] on war onset, frequency, and location." Gallaher (2009, 251) also acknowledges that "the discipline of Geography has not usually been a source discipline for studies of political violence, generally, or terrorism more specifically." In addition to the lack of alternatively scaled studies, there is also a lack of analysis of the underlying environment. Jha et al. (2010, 213), in a case study of a GIS model's applicability in explaining the ongoing (from 2003) Iraqi insurgency, notes that "no human being is born corrupt or insurgent. It is the upbringing, *the environment, social and economic factors that help in molding an individual's behavior* [emphasis added] in a positive or negative direction." Buhaug and Rod (2006, 316) hypothesizes what some of these factors may be "ethnic diversity, economic and social inequality, unemployment, and secondary school enrollment may vary extensively between sub-national regions."

Rather than examine a conflict's onset, duration, intensity, or termination, this study focuses on the recruitment aspect of insurgency. Rather than the individual or group level, I engage this analysis at the level of underlying conflict environment, such as it may drive individuals to join a violent group. This study explicitly assumes that aggression and violence is a culturally-contingent, learned behavior and that the decision to join a group that engages in it differs based on place and that the surrounding cultural, economic and political and physical environment plays no small part in accounting for this difference. In the following sections, I discuss each factor that could apply to the spatiality of insurgent recruitment.

Political Factors

Politics is probably one of the two most examined factors in studying conflict. Most measures generally relate to the grievance theory and the individual level of analysis. Grievance theory need not be limited to the individual-level of analysis. In exploring insurgent recruitment at the environment-level, political grievances held by resident population groups could manifest themselves into a determination to address them through violent or nonviolent means. However, identifying the political grievances themselves is dangerous, for at the most basic level the researcher must be cognizant of his/her own political expectations and not project these on other societies that may have different ideals. The literature identifies previous experience in revolution, low state capacity, and political grievance as significant factors for internal conflict.

Robert McColl, in his seminal 1969 work, suggests a number of sub-factors which may influence the recruitment phase at the broad level of the physical and cultural environment. Examining whether a territory's *previous experience in revolution* presents a

potential temporal problem in that past behavior doesn't necessarily dictate future behavior, but may be an important sub-factor in its own right. Other scholars have found a correlation between this previous experience in revolution and conflict (e.g. Hart 1997; Fearon 2003). A somewhat related factor is Patrick O'Sullivan (1983) argument that populations with a degree of *sympathy for a guerrilla cause* are important in examining conflict.

At the environmental-level of analysis, I understand low state capacity as implying a situation in which the lack of, or ineffective, state presence permits the recruitment of insurgents. Examples of measures of low state capacity include areas in *political opposition* to the central government, areas of *low political stability*, and areas of weak or *confused political authority*, especially those located near borders (McColl 1969). Though McColl originally meant borderlands between jurisdictional authorities, international borders, military districts, and so on, we can probably include porous borders and weak borders as borders lacking a strong presence of political authority considering that these also lend themselves to insurgent recruitment and activity. In addition to noting that civil war has a greater potential of onset during the first two years of a state's formation (concurrent with previous experience in revolution above), Fearon and Laitin (2003) found that political instability in the capital preceded civil war. In their study, the dataset of which spanned 127 conflicts around the world, Fearon and Laitin (2003, 88) concluded that state and regime weakness (state capacity) measured by poverty, large populations, and instability were "better predictors of which countries are at risk of civil war" than indicators of ethnic and religious diversity. Introducing the concept of democratic transitions and war in *Turbulent Peace*, Mansfield and Snyder (2005, 121) argue that democratization foments domestic instability leading to a weak central authority, unstable political coalitions, and what they

euphemistically refer to as "high-energy mass politics." Brown (2005, 214) discusses "weak states" as a structural factor leading to ethnic and internal conflicts, he includes a number of indicators of this weakness including the state lacking political legitimacy, "sensible" borders (though he doesn't define what a sensible border would look like), and control over its territory. Similarly, Hegre (2001) found that political instability, as measured by countries that were either democratizing or becoming more autocratic, were at a greater risk for civil war than strongly democratic or authoritarian countries. In addition to the multi-ethnic/national character of many states in the developing world and the prospect of state failure, Ayoob (2005, 137-138) agrees with Hegre (2001) noting that democratization also has a role to play in internal conflict, especially when democratizing regimes are seen as weak by separatist movements or lose their monopoly on the "instruments of violence." Finally, Arjona and Kalyvas (2008) also found that low levels of state capacity were important in explaining insurgent and counterinsurgent recruitment.

More explicitly examining grievance theory and its applicability to recruitment at the individual-level, Arjona and Kalyvas (2008, 29) found that grievance whether "economic, political, or ideological" did not explain recruitment patterns between insurgents and counterinsurgents in Colombia. Mika Vehnamaki (2002) proposed additional factors, at the individual and population group level and related to grievance, to explain internal wars. These include an individual's (or a group's) *aspiration for power*, the presence of political (and economic) *hardships*, and political (and economic) *inequalities*. Vehnamaki also asserts that *prejudices* against minorities, within the rubric of political grievances (Vehnamaki 2002; c.f. Brown 2005; Gurung 2005), is a factor that can explain internal wars. However, Fearon and Laitin (2003, 85) do not see state-sponsored

discrimination against minority languages and religions as related to civil war onset as they found them to be "not associated with systematically higher risks."

Economic Factors

The other oft discussed cause of intrastate violence is economics. The literature clusters around identifying inequality, natural resources, and poverty as significant to explaining internal conflict. Generally, the key concept is economic greed, in contrast with grievance (which is associated with the political factor). At the individual level and governmental level, the economic (greed) is straightforward. One explanation for the outbreak of conflict is one group attempting to acquire resources held by another. In turning to an analysis of recruitment at the environmental-level, we might expect that economic inequalities between places create an environment conducive to the recruitment of potential insurgents. In addition, we might also hypothesize that poverty rates within an area are also conducive to recruitment. Brown (2005, 217) conceptualizes economic factors leading to ethnic and internal conflicts as based on economic problems (e.g. slowing economic growth or inflation), the presence of discriminatory economic systems (e.g. based on ethnic or class bias, though this could be interpreted as a political grievance), and the process of modernization and economic development (e.g. the disruption of traditional political systems or family/social life). His framework suggests that there is some overlap between the grievance and greed dichotomy, especially since one could maintain economic grievances and be greedy. Arjona and Kalyvas (2008) make this distinction in their study of 829 interviews of demobilized insurgents and counterinsurgents in Colombia. They found that economic grievances (as measured by an individual's reported *social class, employment status, household income,* and *community's wealth*) do not significantly

explain differences between those who joined either group. However, they do find that greed (social class, expecting a *material reward* or making *material sacrifice* to join a cause) may motivate individuals to join counterinsurgent rather than insurgent organizations (Arjona and Kalyvas 2008). Malinowski (2005), citing research on U.S. military recruitment, hypothesized that the unemployment rate may not be important overall since recruiting contracts did not vary significantly as unemployment fell.

Murshed and Gates (2005) distinguished between horizontal inequality, or differences between groups, and vertical inequality, differences within a homogenous group. In a study of the Maoist insurgency in Nepal, they found that horizontal inequality (as measured by landlessness and the human development index) between population groups and between peripheral areas and the capital, "robustly explain the intensity of the Maoist insurgency...[as] poverty, the lack of employment opportunities, and other forms of horizontal inequality assist Maoist recruitment and retention making life in Maoist cadres an attractive option (Murshed and Gates 2005, 132)."

Hatlebakk (2009, 11) examined inequality and poverty (both in terms of land and income) in connection with the Maoist insurgency in the hilly and mountainous districts of Nepal and found results similar to Murshed and Gates' in that areas with Maoist governments had higher poverty rates and more inequality in the distribution of land. Cederman et al. (2011) examined horizontal inequality within countries across the globe and found that groups in highly unequal societies were more like to be in conflict than in more equal societies. Both Murshed and Gates' (2005) and Cederman et al.'s (2011) results partially validate Vehnamaki's (2002) assertion that areas of lop-sided *land ownership*, in addition to the presence of population groups who endure economic (or political) *hardship*

or *inequality* and have a desire to dominate *raw materials*, are critical factors contributing to the outbreak of internal war in some countries of sub-Saharan Africa. However, Muller and Seligson (1987) would suggest further context in that land inequality may only be relevant when there is substantial income inequality present. Though not related to violent conflict, Alesina (1999) tied ethnic fragmentation in U.S. cities to lop-sided distribution of public goods, demonstrating the crosscutting relationship between economic (or political) inequalities and demography.

The availability of resources and raw materials is one avenue that geographers have used to explore armed conflict (c.f. Le Billon 2001; Rustad 2008). Buhaug and Rod (2006) suggested that the presence of *natural resources and a desire to control their extraction and use* is a determinant of civil wars across a large number of states (c.f. Turner 2004). Within Assam, India, Dasgupta (1997) observed a desire to control valuable natural resources on the part of ethnic insurgent groups. There, insurgent leaders perceived the extraction of various natural resources by their stated enemy (the Government of India) as a form of internal colonial extraction. Similarly, Fearon and Laitin (2003) found that presence of oil resources is statistically significant and positively correlated with civil war onset, even when controlling for the Middle East region. However, Murshed and Gates (2005) found that conflict intensity in Nepal correlated negatively with resource availability. In examining resources more deeply, Collier and Hegre (2001; 2005) found that *primary commodity exports* (such as food or energy resources) have a significant effect on conflict. In addition, they find that proxies measuring a person's foregone earnings (such as *economic growth rate*, per capita income, and *male secondary school attendance*) are also significant in explaining civil conflict. Rather than trade, McColl (1969)

hypothesized that areas characterized by economic *self-sufficiency* are ideal for conducting insurgencies. In McColl's (1969) model, economic self-sufficiency in an area would be a positive reason to establish a core area or guerrilla base because of its insulated and relatively independent situation. A relatively new perspective examining natural resources is the impact of environmental change on conflict and the study of environmental security (Diehl 1998; Gleditsch 2005).

Of course, one's economic earnings directly relate to economic poverty and others argue that this is also an important factor in explaining the onset of civil war across multiple countries (c.f. Buhaug and Rod 2006; Fearon 2003; Collier 2001; 2005; Brown 2005; Hatlebakk 2009). However, Fearon and Laitin (2003, 76, 88) concluded that it is conditions favoring insurgency and civil war (*per capita income* as a measure of state weakness) rather than greed (per capita income as inequality) that explains the onset of civil war. A 1997 study of Ireland by Hart found that violence was positively associated with rural poverty. Pasquale and Travaglianti (2009) argue that countrywide economic shocks increase the likelihood of civil war.

Demographic Factors

Another factor given as causing internal conflicts can be grouped under the classification of demography. These indicators center squarely on the state's inhabitants and how we can be subdivide them, whether by ethnicity, religion, age, or class, where they concentrate, and how their populations expand. We must be cautious with too general of an analysis however, for not only does each individual have multiple identities, but one can often stereotype entire population groups based on perceived political or economic associations. Among the various indicators presented in the literature the most discussed

are the presence of youth and students in movements or minorities in the general population, and the effects of large or dense populations.

McColl (1975) notes that although insurgents attempt to organize all population groups, whether based on gender, religion, ethnicity, tribe, or class insurgents would emphasize those population groups residing in key geographical or political areas. Despite this goal of universal appeal, McColl (1975, 303) argues that two groups are of primary importance to insurgent movements in Asia, "*intellectuals and students*" and young men. Dasgupta (1997, 354) found evidence of the importance of the educated classes in Assam, noting that Assamese ethnic insurgent groups reflected the "predominantly middle-class nature" of society and that the groups were dominated by "educated young men." Fearon and Laitin (2003), referencing Samuel Huntington's assertion that areas inhabited by large numbers of *young men* are violence-prone, found that although high proportions of males between ages of 15 and 24 correlated positively with civil war onset the result was somewhat unclear. Malinowski (2005, 353), discussing results from a 1975 to 1999 study by the U.S. military, noted that the propensity of individuals to enlist in the U.S. military "drops off with the age of survey respondents," moreover the survey found that men were much more likely to want to join the military than women. Fearon and Laitin (2003, 86) found a strong negative correlation between this proportion and income and, when both are included in their model, income had a more significant effect on determining civil war.

Hegre and Raleigh (2007), examining several countries in central Africa, identified prevailing explanations for why "large" countries experience more civil conflict than "smaller" countries. One set of explanations relates to population-mass, or the 'per capita propensity' hypothesis, which assumes that there is a constant, homogenous propensity for

conflict across individuals (which obliquely references the nature/nurture debate of conflict among humanity), thus countries with *larger populations* are more at risk of experiencing conflict. Raleigh and Hegre (2009) found in their analysis of 14 countries in central Africa that the risk of conflict increases with local population size. Fearon and Laitin's (2003) study verified this hypothesis, finding that more populous countries had more of a risk of civil war onset, compared to less populous ones. They noted that this didn't correlate to population diversity (as they controlled for it in the study) but concluded that it was indicative of state weakness (c.f. Collier 2001). Tir and Diehl (1998), examining the influence of population growth and density on interstate conflicts, concluded that while *population growth* was positively correlated with the likelihood of a state becoming involved in a military dispute there was "little to no evidence" that these states (experiencing high population growth rates) would be the initiator of the conflict or that the conflict would escalate into war. Another set of explanations focuses on population concentrations and assumes that the likelihood of conflict increases as populations become more concentrated (Hegre 2007).

In terms of population concentration/distribution, Patrick O'Sullivan (1983) suggests that population density is important in that it provides potential materials, recruits, and moral support for insurgents (c.f. McColl 1975). In an article discussing local determinants of African civil wars, Buhaug and Rod (2006) present the 2004 findings of Collier and Hoeffler noting that areas of *low population density* and areas of *low urbanization* positively contribute to the duration and intensity of civil wars, though not their onset (c.f. Collier 2001). Similarly, Arjona and Kalyvas (2008, 30) also found that

"rural contexts favor rebel recruitment." On the other hand, Tir and Diehl (1998) did not find population density to be significant in assessing risk of interstate conflict.

Another aspect of demographic factors regarding civil conflict focuses on minority groups, which directly relates to individual and group constructions of identity (c.f. O'Loughlin 2010; Piazza 2006). There is much difficulty in presenting identity as the primary cause of conflict since groups can organize themselves along ethnic or religious lines while their true motivation may be political grievance, economic greed, or some other factor (c.f. Daley 2006; Korf 2006). In fact, some argue that it is necessary to analyze civil conflicts centered on identities separately from non-identity conflicts since the former are rooted in political grievances while the latter are based on economics (Sambanis 2001). Despite this problem, analyzing minority groups can still provide some explanation to the problem of insurgencies. In combining minority groups with population concentration, Buhaug and Rod (2006, 321) "agree with Sambanis (2003) in that the *regional distribution of ethnic groups* may be more important than the extent of ethnic fragmentation in the country as a whole," as measured by the local dominance of a minority language (c.f. Brown 2005; Gurr 2005). Fearon and Laitin (2003) may agree with this assertion for they found that ethnic and religious diversity, at the country-wide level, was insignificant in explaining civil war onset. Similarly Collier and Hoeffler also found ethnic and religious fractionalization and fragmentation to be statistically insignificant in predicting conflict onset, but they found that *social fractionalization* and *ethnic dominance* are significant. According to their study, a "maximally fractionalized" society has a lower risk of conflict compared to a relatively homogenous society. In their (2001, 13) view, ethnic dominance occurs as a mid-point between ethnic homogeneity and the maximally fractionalized

society, where potential for conflict starts low, rises with ethnic dominance, and falls as diversity increases. Disagreeing with both the Fearon and Collier studies is Reynal-Querol (2002), who found that *religious polarization* and *animist diversity* is significant in explaining ethnic civil war.

Human Development Factors

The human development factor encompasses other aspects of life, such as education, health, and personal security that are critical to human well-being. The underlying assumption at the environmental-level is that grievances or greed stemming from poor access to effective education, health, or personal security may foster an environment conducive to insurgent recruitment. Within the literature, these factors may be some of the least explored but for those who have explored it, I find that they emphasize education and community structure.

A number of authors, and organizations, have continually proposed that the presence of young, student-aged males and others connected with education promote susceptibility to civil conflict. Fearon and Laitin (2003, 86) noted that although *schooling rates for males* is positively associated with civil conflict, but income is more so when it is included in their model. Robert Kent (1993, 442), utilizing McColl's framework, qualitatively examined the development of the Shining Path guerrilla movement in Peru. He noted that the group got its initial start through control of *faculty at a local university*. According to Kent, domination of the university provided a place to serve two purposes: recruit local youths into the movements and propagate the group's ideology. Most important is the combination of these two outcomes, the spreading of the revolutionary message by new school teachers from the university, which allowed the Shining Path to

establish a “widespread network of adherents and sympathizers in the countryside,” which crosscuts to Patrick O’Sullivan’s hypothesis noted in political factors section. Later and still emphasizing educational places, the Shining Path moved from the university to inaccessible areas in the countryside where the group established “popular schools” (Kent 1993). Hart (1997) also noted that violence in Ireland was positively associated with the presence of local activist recruiters, particularly *school teachers*. Of course, this sub-factor (presence of educators) correlates with the demographic sub-factor of intellectuals and students discussed in the demographic section.

Arjona and Kalyvas’ (2008, 11) discuss community structure such that “strong cohesive communities are more able to overcome the collective action problem than dispersed, weak communities.” At the individual-level they measured community structure through an individual’s perception of *trust* in community, enlisting because *friends and family* had, whether community members *discussed community problems* amongst one another, and whether individuals knew of other members from the community who joined.

A final consideration within the sphere of human development is security, where recruits join a violent group out of a perceived need to protect themselves, their homes, or their loved ones from perceived risks (c.f. Brown 2005; Guichaoua 2007). Arjona and Kalyvas (2008) measured this aspect in their study by noting an individual’s reason for joining an armed group was for *protection* and whether an individual experienced *insecurity* prior to joining.

Physical geographic Factors

The final factor that drives insurgency recruitment is physical geography. This set of factors relates to the physical landscape itself and the ways in which it may create a permissible environment for insurgent recruitment. The literature on the effects of terrain and physical geography clusters around arguments on the importance of access and the surrounding terrain, urban areas, and location.

McColl (1969) argued that two important physical geography factors for an insurgency are its *access* to important military and political targets, such as capital buildings, police posts, and other symbols of state power, and the presence of *favorable terrain* to conduct operations and security (c.f. Buhaug and Rod 2006; Rustad 2008). O'Loughlin and Witmer' s (2010) geographically weighted regression model explaining the diffusion of violence in the Russian Caucasus found both of these factors significant. Notably, Arjona and Kalyvas (2008) indirectly measured state capacity by the presence of a road in an area. Furthermore, Fearon and Laitin (2003) found that mountainous terrain was positively associated with civil war onset. On the other hand, Murshed and Gates (2005) found in Nepal that an extremely mountainous area or a valley was less likely to experience intense conflict, as violence predominantly occurred in transitional areas.

A second key analytic theme related to an area's physical situation explores the importance of cities and rural areas. In a second study McColl (1975) argued that *cities* have important terrain elements similar to key rural terrain, important political targets (especially in primate cities), propaganda value, and important political populations that make them significant to insurgencies. Patrick O'Sullivan (1983), agreeing with McColl, emphasizes the similarities between high density urban areas and complex rural

topographies, making them sites of favorable terrain for insurgencies. Raleigh and Hegre (2009) found that risk of conflict increases with population size and density especially if those dense areas are far from a capital. On the other hand, as noted above in the demographic section, some scholars have found that rural areas are more significant to insurgencies, including the recruitment process (Arjona 2008; Collier 2006).

Finally, authors such as Buhaug and Rod (2006), McColl (1969) and Hegre and Raleigh (2007) have examined physical location from its most basic premise. Buhaug and Rod (2006) found that *location*, specifically in the periphery, is a prominent factor in determining the length and intensity of African civil wars (c.f. Buhaug and Gates 2002; Buhaug and Lujala 2005; Hart 1997). One of McColl's (1969) political factors, "confused political authority," also highlights the potential importance of location in that border locations (especially near international boundaries) are more likely to be areas of ambiguous authority. Hegre and Raleigh (2007) also examined a related factor, *distance*, to the likelihood of civil conflict. Their study examined distance to capitals, to borders, and to the rebel headquarters in addition to other demographic variables, such as population size. While they found that distance was only moderately associated with a risk of conflict, the risk increased when the area had a larger population size. This idea is significant in its ability to synthesize, as it addressed the geographic clustering of minority groups far from the center of state power.

In this chapter I have provided summarized and analyzed a cross section of the existing literature related to conflict, insurgency, and recruitment. Starting with a broad examination of conflict itself, I narrowed the focus to violent conflict and then to violent internal conflict. This research rests in one subset of that latter category, insurgency. My

research departs from much of the existing knowledge in a number of ways, whereas most research focuses on the violent outcome of conflicts (such as bombings or killings) this work focuses on recruitment arguably one of conflict's beginning points. Secondly rather than conducting a longitudinal, small-scope (in the geographic sense) study of insurgencies occurring since 1945 across the globe, I have studied the recruits to one specific organization at the sub-national level in one country, Bangladesh. Finally, my research also focuses on the environment in which recruitment is taking place rather than the individual, who decides to join (or is coerced into joining) an insurgency, or the group, which is conducting recruitment. I have also presented five broad categories of factors that potentially influence this conflict environment and highlighted some of the most salient findings from the academy. Some of these factors, political, economic, demographic, human development, and physical geographic, are included as measurements for the statistical analysis that I conducted in the course of this research. In the next chapter I discuss these 11 measurements that represent each of the five broad categories, present my methodological framework, and utilize geographic statistics to answer my first research question. Are there significant geographical concentrations of JMB recruits within Bangladesh?

Chapter 3: Data and Methods to Analyze the Insurgency

Based on the literature, I have selected 11 measures that relate to each of the five factors, political, economic, demographic, development, and physical geography. In this chapter, I introduce each measurement, its source, and what I am expecting in terms of what relationship with the dependent variable. First, however, I will discuss the dependent variable related to the *Jamaat-ul Mujahideen fi Balad al-Bengal* (JMB) insurgent group. Following the discussion of the measurements, I will present my analytic methodology and the software used to complete it. Finally, I will present the basic statistics and initial observations of the entire dataset.

In my effort to describe the spatial concentration of JMB recruits in Bangladesh I utilize a unique dataset for my dependent variable (Y), *number of arrestees*. The security services of Bangladesh detained these individuals, and their home districts (and occasionally, sub-districts and home villages) were made public to the Bangladeshi press. Subsequently I sifted through the online archives of one English-language daily newspaper, The Daily Star (http://www.thedailystar.net), and catalogued the name (to track duplicates), other name (such as an alias to help differentiate individuals with the same name), notes on the arrestee (such as personal relationship or political party affiliation), their position in the JMB hierarchy, and the id code for their home sub-district, and home district. Though I did not limit my archival search to a beginning year, the first arrestee found was detained in June, 2001. My end date for the search was March, 2011. For this research I performed key word searches on The Daily Star's archival search engine for the terms "JMB" and "arrest." From these results, I manually reviewed each news article and transcribed data into

Microsoft's Excel program. The following is an example of a particularly informative Daily Star report from May 2010:

> Five alleged members of the outlawed militant Islamist outfit Jamatul Mujahideen Bangladesh (JMB) were arrested at Chariakona in Katiadi upazila [note: subdistrict, in Kishoreganj district] yesterday. The arrestees were identified as Arif, 25, son of late Alek Mia of Gaital in Kishoreganj Sadar, Kamal, 25, son of Dulal Mia, of Galimgazi in Kishoreganj Sadar, Humayun Kabir,28, son of Fazlur Rahman of Kasurarchar in Kishoreganj Sadar, Mowlana Masud, 30, son of late Nabi Mia of Maizhati in Pakundia upazila and Mujahid, 16, son of Sabrin Ahmed of Ghagra in Pakundia upazila. (Daily Star 2010)

Of the 1,067 persons identified as having some suspected or confirmed involvement with the JMB, 782 had their home district reported. Additionally, 685 had their sub-district reported. In Bangladesh, "divisions" are the first order administrative areas, equivalent to "provinces" in most countries or "states" in the United States. A district, *zila*, is a second order administrative area within a division and equivalent to a county. Finally, a sub-district, *upazila*, is a third order administrative area and is similar to wards in a city or when separating an urban area county from several rural counties in its hinterlands. For example, Barisal division is divided into six districts, one of which maintains the divisional capital, Barisal district. Barisal district is divided into ten sub-districts including Barisal Sadar, the urban area where the capital is located. *Sadar*, or center, often denotes the sub-district that contains the capital of the district. In consideration of the larger number of home district reports and that a number of the independent variables had data missing at the sub-district level, I chose to conduct this analysis at the district level. There are a total of 64 districts in the country currently assigned to one of seven divisions (see Figure 3.1). However, the government created Rangpur division fairly recently. Thus, this study treats those districts as part of Rajshahi division (which they were assigned to previously).

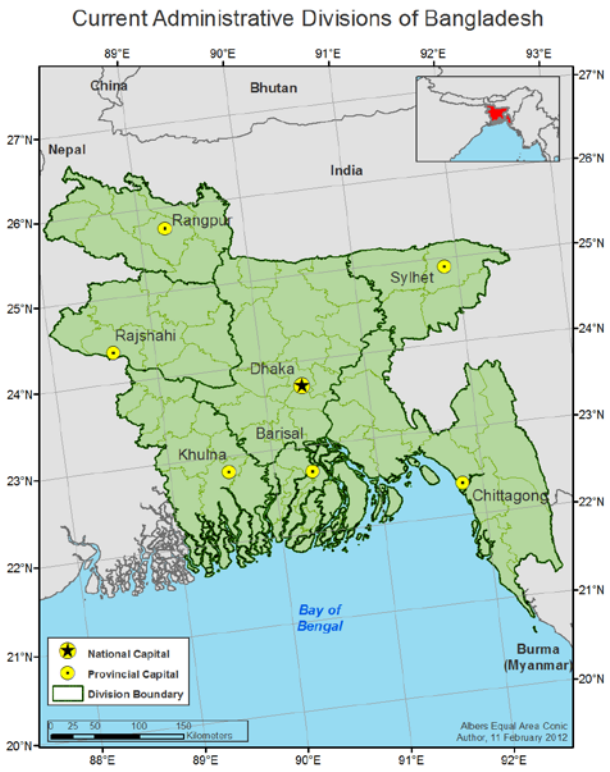

Figure 3.1 Current Administrative Divisions of Bangladesh.

The first independent variable is the measurement of *political opposition* in the district (X1, short name: opposition); it is one measure of the political factor. More specifically, I use the ratio of votes for the Bangladesh Nationalist Party (the BNP) and Jamaat-e Islami Bangladesh (JIB) party, of the total votes cast in each electoral district, in the 1996 parliamentary elections as the measurement. The Awami League (AL) formed the government following this election, while the Bangladesh Nationalist Party (in coalition with JIB) had been in power previously. By 2001 the BNP and JIB had returned to the government following a strong showing in that year's parliamentary elections. Thus, I assume high proportions of votes for these two parties in the 1996 election would indicate strong support for the political opposition during the Awami League's governing tenure. There are alleged links between the JMB and the two political parties as well. In particular,

Singh (2006) believes that the JIB may provide political cover for the JMB's activities. In 2009, the Daily Star alleged that some elements of the Bangladesh Nationalist Party, including Tarique Rahman (son of former Prime Minister Khaleda Zia of the BNP) and the mayor of Rajshahi city, also patronized the JMB. The source for the 1996 election results is the Bangladesh Election Commission, specifically the *Statistical Report: 7th Jatiya Shangshad Election*. This data is provided at the level of the 300 electoral districts (one district for each of the 300 seats at the national parliament). To aggregate this data to the district level I summed all electoral districts assigned to the district. However this only worked for 298 of 300 electoral districts, two electoral districts were irregular "Barisal with Pirojpur" and "Mymensingh with Netrokona." I assumed the name to indicate an electoral district that traversed district boundaries, since all four names (Barisal, Pirojpur, Mymensingh, and Netrokona) are district names. I double-counted these electoral districts in each respective district, thus I applied the BNP, JIB, and total votes in "Barisal with Pirojpur" to Barisal and Pirojpur. In terms of hypotheses, I would expect areas of higher proportions of BNP and JIB votes to correlate (if at all) with areas where recruits tend to originate. A significant statistical result would imply that political opposition to the Awami League government between 1996 and 2001 is significant in explaining the concentration of JMB personnel from certain areas.

The second independent variable is whether or not the district is *adjacent to an international boundary* (X2, short: border). Like the opposition variable, it also measures the political factor. I binomially classified this variable as "1" for districts adjacent to the border with India or Burma (Myanmar) and "0" if the district does form part of the border with these countries. I assumed that there would be no difference in a district border either

India or Burma (Myanmar). The source for this measurement is the GIS data available from the Global Administrative Areas website (http://www.gadm.org/country), specifically the BGD3 shapefile. I hypothesize that the home districts of arrested JMB cadres will concentrate in areas adjacent to the international border.

The next variable is the ratio of *households owning land* (X3, land) and is one measure of the economic factor. The data is derived from the results of the 2001 Census at the district- and sub-district-levels, available from the website of the Bangladesh Bureau of Statistics. I had to utilize both sets of returns due to inconsistency in data availability. Among the district-level series, Manikganj and Rajbari districts were not accessible from this website. In lieu of the district results, I utilized the available sub-district (*upazila*) results. Incidentally, all sub-district profiles are available except for Sirajganj district. I assume that landlessness would contribute to economic poverty in this primarily agricultural state. According to the CIA World Factbook, the 2008 estimate for the agricultural sector's share of the total labor force was 45%. I hypothesize that areas with a high proportion of land ownership in 2001 will not be areas where arrested JMB cadres will have originated.

The fourth independent variable is also a measure of the economic factor and the ratio of *households in a district residing in jhupri- or kutcha-type houses* (X4, housing). Like the land ownership variable, this variable is also derived from the 2001 Census and is subject to the same caveat in regard to Manikganj and Rajbari districts, i.e. I utilized sub-district results in lieu of the missing district results. *Jhupri*- and *kutcha*-type houses are thatched and mud houses, respectively. In addition to collecting the proportion of households residing in these dwellings, the 2001 Census also collected the number of

households residing in semi-*pucka* (brick) and *pucka*-type houses. I am utilizing this measure as a proxy for economic income statistics since the 2001 Census did not collect (or chose not to publish) this information. Other potential proxies for income include the type of toilet facilities available to the households (sanitary, non-sanitary, and no facilities), whether or not the households have a connection to the electricity, and the tenancy status of the households (owned, rented, rent free). I hypothesize that areas with high proportions of *jhupri*- and *kutcha*-type houses will also have concentrations of JMB arrestees originating from there.

The first measurement of the demographic factor is the *number of young people attending school* in the district per square mile, or student population density (X5, student). Derived from the 2001 Census, this measure tracks the number of students in school who are aged between five and 24 years old. This measure does not account for the total population aged between 5 and 24 years old but the amount of that population active in school. I hypothesize that an area of higher numbers of active students per square mile will also have concentrations of JMB arrestees claiming that district as a home.

The second measurement of the demographic factor is the overall *population density* of the district (X6, density). The 2001 Census provides the data for this measurement. Similar to the student density variable, I hypothesize that as the population density increases a greater number of JMB arrestees will claim that district as home. I reason in both cases that concentrations of populations facilitate the recruitment of individuals to the insurgency by allowing the fewer recruiters to reach larger numbers of potential recruits.

The final measurement of the demographic factor is the ratio of *persons claiming to adhere to minority religious systems*, specifically those claiming to be Hindu, Buddhist, Christian, or "Other" (X7, minority). It is unclear from the Census whether "other" includes minority Islamic sects in Bangladesh, such as the Ahmadiyyas and Shi'a or other religious systems. The former is a frequent target of Islamists who view the community as heretical. However this information is derived from 1991 Census results, rather than the 2001 Census due to incomplete data, the 2001 Census did not publish religion statistics at the sub-district level (precluding tabulation of Manikganj and Rajbari), and inconsistencies, some districts (like Barisal) did not report the proportions. Religious composition of Bangladesh (at the district) level is available from the 1991 census and was found at the website for the Human Rights Congress for Bangladesh Minorities of Dallas/Fort Worth. I hypothesize that districts with high proportions of minority religious populations will also be home to higher numbers of JMB arrestees, as the close proximity of minorities may radicalize some individuals.

The eighth variable is a measurement of the human development factor and is the ratio of *households with access to improved water* supplies (X8, water). Specifically, I am seeking the proportions of households in the district utilizing tap, tube well, or deep tube well water. This data is available from the 2001 Census. In addition to these data points, the census also collected information relating to pond and other sources of water. This measurement is likely to be related to the housing-type measure and may be strongly correlated; however, I include this measurement as it is not only indicative of economic income, but to a certain degree health outcomes as well. I hypothesize that districts with

higher proportions of households with improved water access will also have lower numbers of JMB arrestees claiming to be from that area.

While the previous variable is related to health outcomes for the local populace, the ninth variable measures the *growth of female literacy* among women over seven years old (X9, literacy). This measurement utilizes data from the 2001 and 1991 censuses to compute the annual rate of growth over that decade. Both numbers are found in the 2001 census returns. I hypothesize that districts with higher growth rates for women's literacy will have lower numbers of JMB arrestees originating from them.

The first measure of the physical geography factor is the *distance from the district centroids to Dhaka* (X10, distance). This dataset relies on the GADM shapefiles for its data. With this polygonal shapefile, I used the calculate geometry tools to extract the latitude and longitude of the geographic centroid of each district's polygon. I then created two new point shapefiles, one for the centroids of each district and another with the point of the center of Dhaka district. I then used the "Point Distance" tool to calculate the distance between each of the 64 district centroids and the Dhaka district centroid. The outcome of this tool provides the distance of the geographic center of the district to the capital of the country, Dhaka (in effect, the center of Dhaka district to Dhaka is 0). I hypothesize that the farther the district from the capital, the more JMB arrestees are likely to originate there.

The final measure of the physical geography factor is the district's *status as or neighbor to important political locations* (X11, access). Specifically, this is binomial measure indicating whether a district contains the provincial or national capital, neighbors the provincial or capital district (both coded as 1), or neither (coded as 0). The GADM shapefile forms the basis for this measurement as well. I hypothesize that JMB arrestees

will probably originate from districts adjacent to or containing the provincial or national capitals. As I discussed previously, this analysis does not include Rangpur as a provincial capital. Table 3.1 presents a summary of these measurements, their factors, and other pertinent information. In the next section I will provide an introduction to the analytic methodology and introduce the full dataset and some of its basic statistics. In the next section, I discuss the statistical methods I used to answer my two key questions, is there a significant concentration of JMB recruits in Bangladesh, and, if so, what measurements and factors are most important in explaining this concentration?

Table 3.1 Measures and Factors.

Var.	*Factor*	*Short name*	*Explanation (Source)*
Y	Dependent	Arrestees	Arrested JMB cadre (newspaper archives)
X1	Political	Opposition	Ratio of BNP and JIB in 1996 election (BEC)
X2	Political	Border	Areas adjacent to international boundaries (GADM)
X3	Economic	Land	Ratio of households owning land (2001 Census)
X4	Economic	Housing	Ratio of poor quality houses (2001 Census)
X5	Demographic	Student	Student population density (2001 Census)
X6	Demographic	Population	Population density (2001 Census)
X7	Demographic	Minority	Ratio of minority religions (1991 Census)
X8	Development	Water	Proportion of improved water (2001 Census)
X9	Development	Literacy	Annual growth of literacy of 7+ females (2001/1991 Census)
X10	Physical	Distance	Distance to Dhaka district (GADM)
X11	Physical	Access	Areas adjacent to provincial or national capitals (GADM)
Unit of Analysis: District (n=64)			

Methods

My studies utilizes both spatial and nonspatial statistics to answer my two research questions, the first asks if there is a geographic concentration of JMB recruits in Bangladesh. The second asks, if the first question is true, is the political, economic, demographic, human development, or physical geographic aspect of the local conflict

environment the best explanation of this geographic concentration. In order to answer my first key question, whether or not there is a spatial concentration, I conducted three statistical tests. The first two are based on spatial statistics, Moran's I and the Getis-Ord GI*. Moran's I is a global index of spatial autocorrelation that tests whether there is spatiality to the data. If significant, the test indicates there is a spatial concentration of the data. However, the Getis-Ord GI* is needed to discover the local index of spatial autocorrelation. This process calculates within a spatial dataset the local units that are significantly different from others. In the context of this study, the Moran's I tests whether there is a spatial concentration of JMB arrestees within Bangladesh. Even if the test is statistically significant we will not know where the significant concentration is. Thus, the Getis-Ord GI* will ascertain which districts have significantly different numbers of arrestees. The third utilizes nonspatial statistics, but is driven spatially, based on the data I utilized a Kruskal-Wallis and Whitney-Mann U tests to determine if there was a statistically significant concentration of JMB arrestees based on Bangladeshi region. These pair of tests are similar to the Moran's I and Getis-Ord GI* in that the Kruskal-Wallis is a global test, it can indicate a significant relationship, based on region, within the dataset but not indicate which relationships are significant. Thus, we utilize the Whitney-Mann U tests to determine which regional relationships are statistically significant. Finally, I also utilize map visualization as a tool to further identify significant clusters using raster-based spatial analysis and visual analysis (Figure 1.3). Other scholars have utilized spatial statistics in their study of conflict. O'Loughlin and Witmer (2010) utilize raster-based spatial analysis, Moran's I, and analyses of the mean center and ellipses associated with violent incidents in the Russian Caucasus. O'Loughlin and Anselin (1991) and Raleigh (2007) also utilized

Moran's I. Anselin (1995) discusses the Gi* statistic and a local Moran's I, both local indicators of spatial association, in a study of conflict in Africa.

The second question which seeks to determine what factors are significant in explaining the concentration of arrestees also utilizes nonspatial statistical testing. Specifically, first I conducted a Spearman's rho test to discover how strongly, and significantly, the independent variables relate to JMB arrestees. Like the Kruskal-Wallis and Mann-Whitney U tests, the nature of the data drives my usage of the Spearman's rho. Following this analysis I conduct a series of multiple regressions that seek to build the most effective model that could be used to predict the number of JMB arrestees in Bangladesh. Other scholars have utilized various statistical analyses in their studies of conflict. Piazza (2006) utilized multiple regression analyses in his study of root causes of terrorism, as measured by incidents of terrorism and casualties. Importantly, correlation implies a relationship between variables, not causality. Fearon (2003) utilized logistic regression analysis to predict the probability of civil war onset, given various variables (c.f. Rustad 2008 for a logistic regression analysis of forest cover and civil war). Finally, Murshed (2005) conducted a Poisson regression to analyze the drivers of Maoist violence in Nepal. Finally, Sambanis (2001) employed a probit regression model in exploring the differences between the causes of ethnic and nonethnic civil wars.

My usage of both a spatial and nonspatial statistics is also supported by other recent studies. Hegre and Raleigh (2007; c.f. Raleigh and Hegre 2009) utilized raster/vector analysis and Cox regressions to analyze civil conflict at a sub-national level. Buhaug and Gates (2002), Buhaug and Lujala (2005), and Buhaug and Rod (2006) also utilize various combinations of GIS and nonspatial statistics in assessments of determinants for civil wars

at a variety of scales including the sub-national. Indeed I see my study as adding to the body of research utilizing both sets of statistics, Buhaug and Lujala (2005; 405) note that "spatial analyses are still quite rare" in studies of international relations and peace research, to include studies of conflict.

This chapter focused on outlining the 11 variables of the five factors detailed in the second chapter, political, economic, demographic, human development, and physical geographic. I discussed the sources of the data and hypothesized the relationship between each of the variables and the dependent variables, JMB arrestees. I noted in the previous chapter that my study is significant in its scope. It focuses on a measuring the Bangladeshi conflict environment at a sub-national scale and how it potentially affects JMB recruitment As the methods section of this chapter highlighted, others have utilized a combination of GIS and nonspatial statistical analysis to study conflict. To my knowledge, no one has applied both sets of analyses to the problem of insurgent recruitment at the sub-national scale.

Limitations

There are a number of limitations to my study, as well as some errors that may be present. A number of errors are derived from the various statistical tests that I will use. Confidence intervals of 95% and 90% imply a 5% and 10% chance, respectively, of committing a Type I error. This error implies the rejection of the null hypothesis even though it is true, these confidence intervals imply that there is a 5% and 10% chance of committing this error. In addition, the regression models' can also low explanatory power, given by the R-square statistic. Low explanatory power would indicate that the model could only account for a limited amount of variance in JMB arrestees. The implication is

that there are other factors (or measurements) that account for this variance. One key assumption of all regression models is that the residuals are normally distributed. If one of our regression models violates this assumption then our results may be invalid. An additional assumption is that the variance among the residuals are about the same, violating this assumption could indicate that our results are skewed by outliers. My relatively low number of cases, 64 districts, will probably be a large factor in problems with my analysis. Because of this low number of districts, attaining high model significance (R-square) would be difficult. Indeed, conducting separate analyses with smaller datasets decreases the likelihood of finding clear, definitive results.

There is also the element of human error. There are two likely places for this particular type of error to be introduced. The first is in the collection of the number of arrestees, which required the review of more than 100 individual news paper articles and tabulating the home areas into a digital spreadsheet. Another area was in a similar form during the transferring of Bangladeshi census data from a scanned document format to digital spreadsheet. Of course, this is not to mention non-author types of error such as the misreporting of home districts by news agencies, misquoted census or voting returns by government agencies, or any other intentional or unintentional human error.

Compounding potential author manual error is author intellectual error. I could be theoretically wrong; I may have chosen the wrong set of factors or, more likely, measurements for the five factors. The 11 measurements I chose are probably representative of the factors, but they could be more representative of other phenomena. For instance, growth rate of female literacy is representative of human development but it may be more indicative of *faster* human development. Perhaps a more appropriate measure

would be number of female literacy projects ongoing in the district between 1991 and 2001? Similarly economic poverty can be measured in a number of ways and my usage of landlessness was driven partly by data availability. The landlessness is reported in the Bangladeshi 2001 census, ratio of population living under U.S. $1 a day is not. The unit of analysis could be wrong, as I stated previously, the statistical analysis likely suffered because of the low number of cases represented by the districts. Originally, I had planned to conduct this analysis at a sub-district (*upazila*) scale. However, data availability again played a role in my decision to scale down (in the geographic sense). Census returns from the sub-districts in Sirajganj district are unavailable, though some district returns were also missing I was able to sum and average their constituent sub-districts to fill in those gaps. Finally, an error could arise from my treatment of all JMB arrestees equally. A 2010 International Crisis Group report, which based some its findings on judicial documents, noted that the JMB had a four-tier structure. The highest was the decision-making body the *Majlis-e-Shura*, the second tier, *ehsar* (full-time member), ran the groups fundraising, military operations, and recruitment. The third tier, *gayeri ehsar* (part-time member), are unable to partake in full-time militancy because of family or work obligations but pay regular dues and can provide safe havens. Finally the *sudhi* (well-wisher) forms the bottom tier and can provide funds or assistance upon request and can facilitate location of a safe haven (2010). I assumed in this study that the conflict environment would have had a similar influence on all arrestees, regardless of their level of commitment. However, this assumption could be false as the ICG pointed out part-time members could have had family obligations, so different aspects of the environment could have had more of an influence on their decision to join. Finally, although the study accounted for local measures of the

conflict environment, votes in the last election, literacy rates, it did not account for phenomena above or below this scope. For instance, I did not include measures of the global economy nor more localized phenomena. While the former may not have as much influence, driven partially by the domestic focus of the JMB organization, the latter does

The next chapter begins with a brief overview of the basic statistics of the dependent variables and the independent variables. In addition to providing context of these 11 factors to Bangladesh, an additional purpose of these statistics is to ascertain whether the dataset is normally distributed or not. The results of these tests drive the other statistical tests since normally distributed data is a ubiquitous assumption in parametric statistical tests. Then, I will present the results of my methodology and how it answers my first, is there a spatial concentration of JMB arrestees in Bangladesh, and second research questions, what factors are significant in explaining this concentration?

Chapter 4: Assessing JMB Recruitment in Bangladesh

As this research seeks to evaluate relationships between 11 measurements (and the five factors) and insurgent home areas, I have limited the analysis to those districts that recorded at least one *Jamaat-ul Mujahideen fi Balad al-Bengal* (JMB) arrestee. This results in 57 total districts available for the study and seven removed Rangamati, Bandarband, Manikganj, Rajbari, Magura, Maulvibazar, and Sunamganj. The 11 measurements are the district's ratio of votes for opposition political parties in the 1996 election (political factor), whether the district is adjacent to an international border (political), the ratio of households owning land in the district (economic), the ratio of poor quality housing (economic), student population density (demographic), the general population density (demographic), the ratio of adherents of minority religions (demographic), the proportion of households with access to improved water sources (human development), the annual growth rate of female literacy in the district (development), the district's distance to Dhaka (physical geographic), and the whether the district is adjacent to provincial or national capitals (physical). Table 4.1 lists the short name for these measurements.

In the next section I will present basic statistics of the various measurements and discuss potential implications. The upcoming discussion will reference to Table 4.1, which depicts the descriptive statistics of the dependent variable and the 11 independent variables. In addition, it also displays the tests of normality for each variable. The focus of this section is on whether the collected data, on JMB arrestees, election and census data are normally distributed. Our choice of statistical tests is constrained by whether or not the data is normally distributed, since some tests assume normally distributed data.

Table 4.1 Descriptive statistics and normalcy test.

				Kolmogorov-Smirnov	
	Minimum	Maximum	Mean	Statistic	Sig.
Arrestees, Y	1.00	64.00	13.72	0.20	0.00
Opposition, X1	6.67	71.99	41.63	0.07	0.20*
Border, X2	0.00	1.00	0.49	0.34	0.00
Land, X3	33.51	70.74	56.76	0.09	0.20*
Housing, X4	38.51	96.52	86.21	0.17	0.00
Student, X5	85.83	2,622.84	479.93	0.28	0.00
Population, X6	504.33	15,103.42	2,446.88	0.33	0.00
Minority, X7	2.26	52.55	12.15	0.18	0.00
Water, X8	53.87	97.62	90.15	0.27	0.00
Literacy, X9	2.79	13.10	7.30	0.13	0.02
Distance, X10	0.00	308.86	146.24	0.08	0.20*
Access, X11	0.00	1.00	0.544	0.36	0.00

Our dependent variable, number of JMB arrestees by home district has a minimum value of one and a maximum of 64 persons (Rajshahi district). The arithmetic mean is about 13 persons in a district, and the median is 9 persons. The data is skewed positively by a number of potential outliers in the high-value range (Rajshahi, Tangail, and Gaibandha most notably). The Kolmogorov-Smirnov (K-S) test confirms the non-normality of the dependent variable at 95% confidence (p-value < 0.01). Due to this non-normality, nonparametric statistical tests would provide the best analysis of this data.

Similarly, a number of our independent variables are also non-normal. The adjacency to international border variable (X2) is a binary variable that the K-S test notes as nonparametric (p-value < 0.05). The proportion of households residing in *jhupri* or *kutcha* type housing variable (X4) has z-skew and z-kurtosis scores suggesting a skewed and misshaped histogram. The K-S test confirms that this variable is nonparametric (p-value < 0.05). The density of the student population per square mile variable (X5) has a number of significant positive outliers in Dhaka, Narayanganj, and Feni districts, which

pull the average higher. The K-S test confirms these other findings, the data is nonparametric (p-value < 0.05). Similarly the population density per square mile variable (X6) has significant positive outliers and probable heavy skew, as the K-S test also detects non-normally distributed data. The ratio of persons claiming to adhere to minority religions (X7) and the ratio of households with access to improved water sources (X8) are also non-parametric given their K-S tests. The growth in female literacy variable (X9) is also non-parametric, given the K-S test. The variable, adjacency or status as a provincial or national capital (X11), is also non-parametric.

However, some independent variables are normally distributed. The opposition variable (X1) is normal as the K-S test confirms (p-value > 0.05). The ratio of households owning land variable (X3) is also normal. Finally, the Euclidean distance to the capital variable (X10) is normally distributed according to the K-S test.

This mixture of parametric and nonparametric variables will make statistical analyses problematic. Though the fundamental analysis in this study is a multiple regression (presented in the next chapter), the analysis of variance (ANOVA) conducted later in this chapter will utilize nonparametric tests to account for the nonparametric nature of the numbers of JMB arrestees claiming home districts.

Is there a spatial concentration?

The justification for this research lies in the hypothesis that there is a spatial concentration in terms of region of origin of JMB arrestees. The left-hand map (Figure 4.1a) depicts a kernel density of JMB arrestees as found in the archives of the Daily Star, the hatched areas are the seven districts which were not recorded as being an arrestee's home area. It suggests that clusters of the 782 people arrested claim to be from the northern

and western areas of Bangladesh in Rajshahi division. This map was made using the Kernel Density function within ArcGIS with a cell size of 1,500 meters and a search radius of 70 km. This search radius is large enough to account for potential neighborhood relations between district, while small enough to not necessitate them (for instance between the Chittagong Hill Tract districts in the southeast that are expansive). A global spatial autocorrelation test (Moran's I), also run in ArcGIS with a threshold distance of 70 km., is statistically significant (Moran's I = 0.29, Z-score=3.95, p-value < 0.01) indicating that we can be confident that there is global spatial autocorrelation to the numbers of arrested JMB personnel by home districts. The null hypothesis would be that the numbers of JMB arrestees are randomly distributed across space. Constructing hotspots with the Getis-Ord Gi* function (HotSpot Analysis), also with a 70 km. distance threshold, allows us to determine the presence of local spatial autocorrelation.

The results of this test are revealed in the right-hand map (Figure 4.1b). The red areas depict "hotspots" in JMB arrestees that are locally significant with 95% confidence. Orange areas are significant at 90% confidence. There are also "cold spots", areas with noticeable *lack* of arrestee concentration. The deep blue districts are significant at 95% confidence, while the lighter blue are significant at 90% confidence. The seven districts with significance at 95% confidence in the hot spot are Joypurhat, Kurigram, Sherpur, Rangpur, Jamalpur, Naogaon, Gaibandha, and Nawabganj. The four districts significant at 90% confidence are Lalmonirhat, Rajshahi, Bogra, and Tangail. The three districts significant in the cold spot at 95% confidence are Gopalganj, Madaripur, and Barisal. The five districts significant at 90% confidence are Narayanganj, Shariatpur, Munshiganj, Faridpur, and Comilla.

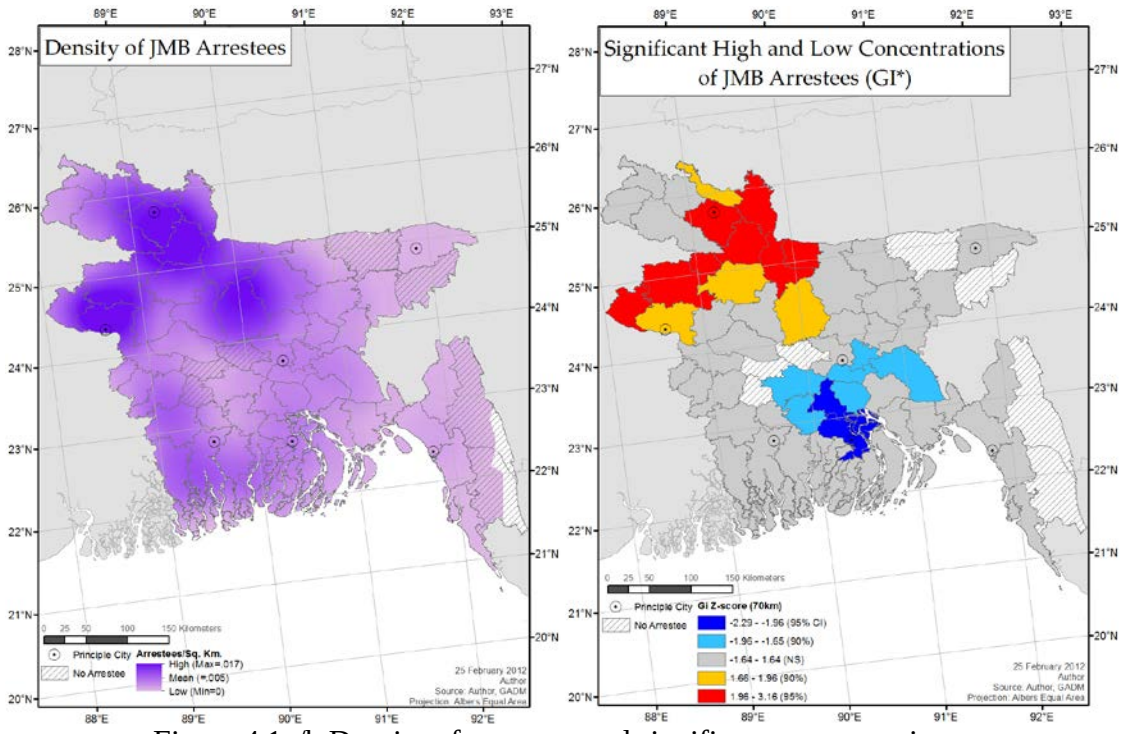

Figure 4.1a/b Density of arrestees and significant concentrations.

I conducted a nonparametric ANOVA based on regions to cross-check the significance of these results. Figure 4.2 provides the breakdown of the country, by division, into 4 regions: 1 South (Barisal and Khulna divisions), 2 East (Chittagong and Sylhet divisions), 3 Capital (Dhaka), 4 North (Rajshahi and present-day Rangpur). Using these regional groupings, which I created in order to obtain similar sizes (each region has at least 10 districts) and maintaining existing divisional boundaries, I conducted a Kruskal-Wallis nonparametric test. This test, which is based on ranks rather than averages, is suitable for non-normal data such as the JMB arrestees. The null hypothesis for this test is that there is no statistically significant difference in the number of arrestees between the four regions (i.e. the variation in arrestees by region is random). The alternative hypothesis is that there is a significant difference. Like the Moran's I test it is a global test, it can tell us that there is significant difference but not where. As shown in Table 4.2, the Kruskal-Wallis χ^2 test

statistic is 15.9 (at df=3) and is significant at 95% confidence. This test indicates that there is significant difference in the average ranks of arrestees based on region. In other words, there is a significant clustering of arrestees based on geographic location. However, I conducted further post-hoc testing to confirm which regional differences are significant.

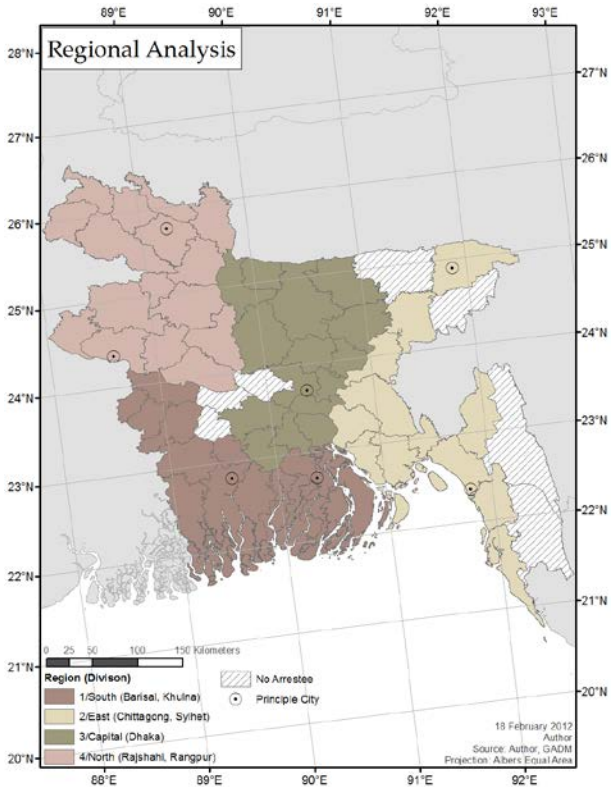

Figure 4.2 Regional groupings used for Kruskal Wallis test.

Table 4.2 Results of Kruskal Wallis test using JMB arrestees as grouping.

	Arrestees, Y	Asymp. Sig.
Chi-Square (χ^2)	15.850	.001

The Mann-Whitney U test is a nonparametric test that we use in conjunction with the Kruskal-Wallis to assess relationships between groups when the Kruskal-Wallis test is significant. In the post-hoc tests to assess whether the individual differences in rank are significant I found that only the North region was significantly different from the rest of the country. Table 4.3 depicts the test statistics and confidence levels for the various Mann-

Whitney U tests. While the differences between the north and the rest of the country are almost certain, the difference between the east and the south and the east and the capital are statistically insignificant at 95% confidence. However, the score is just outside the 90% confidence interval. An expanded dataset could, potentially, confirm that there is a statistically significant difference in the number of JMB arrestees between these two regions. Recall that the Getis-Ord Gi* analysis found districts in the south to have significantly lower numbers of arrestees than expected. Finally, there is practically complete certainty that any variation in the number of JMB arrestees between the capital and south regions is statistically insignificant.

Table 4.3 Results of Mann-Whitney U post-hoc tests.

Statistic (p-value)	South	East	North	Capital
South	X	53.0 (0.12)	60.5 (0.02)	112.5 (1.00)
East	53.0 (0.12)	X	9.0 (0.00)	53.0 (0.12)
North	60.5 (0.02)	9.0 (0.00)	X	59.0 (0.02)
Capital	112.5 (1.00)	53.0 (0.12)	59.0 (0.02)	X

Based on a number of statistical tests, including Moran's I, Getis-Ord Gi*, Kruskal-Wallis, and a number of Mann-Whitney U, I have shown that there is a statistically significant geographic concentration of JMB arrestees in Bangladesh. More specifically, the GI* test and the Mann-Whitney U tests indicate that the most significant concentration is in the northern areas of Bangladesh. I have demonstrated that there is a significant cluster of JMB arrestees in Bangladesh, answering one of my key research questions. In the following section, I will present results of the correlation and regression analyses that

answer the second key research question – how does the conflict environment influence recruitment?

What environmental factors are significant?

In this section, I will present the results of the correlation and multiple regression analyses which seek to explain and measure the relationships between the independent variables (and their underlying factors) and the *Jamaat-ul Mujahideen fi Balad al-Bengal* (JMB) arrestees. I reason that the arrestees are an approximation of JMB recruitment.

Opposition (X1) is the percentage of votes garnered by the Bangladesh Nationalist Party (BNP) and the *Jamaat-e Islamia Bangldesh* (JIB) in the 1996 election. Border (X2) represents whether a district is adjacent to an international border. Both the opposition and border variables measure the political and its relationship to JMB recruitment. Land (X3) is the proportion of households in the district who own their own land. Housing (X4) is the proportion of households in the district living in *jhupri-* or *kutcha-* (essentially, low grade) type housing. Both of these variables measure the economic factor and its relationship recruitment.

Student (X5) is a calculation of the number of students per square mile in the district, while Density (X6) calculates population density. Minority (X7) is the 1991 proportion of persons claiming to adhere to minority (non-Islamic) religions in the district. All three of these variables, student, density, and minority, measure the demographic factor and its relationship with recruitment. Water (X8) is the proportion of households utilizing tap, tube, or deep tube wells (improved water sources) for water consumption. Literacy (X9) is the growth rate of female literacy rates between 1991 and 2001. Distance (X10) is the Euclidean distance to Dhaka from the geographic center of the district. Finally, X11

(Access) is whether a district is adjacent or not to a provincial capital or the national capital, Dhaka. Literacy and water measure the human development factor, while distance and access measure the physical geographic factor, and those factors' respective relationships with JMB recruitment.

Correlation Analysis

First, I will present the results of a Spearman's correlation analysis, which tests whether variables have significant relationships with one another. My null hypothesis in this case is that a variable, such as JMB arrestees, has no significant relationship with each of the other variables. The alternative hypothesis is that each of the variables does have a significant relationship, either positive or negative, with the JMB arrestees. However a significant relationship does not imply causation (e.g. an increase in student population density *causes* an increase in JMB arrestees), it only implies a relationship (e.g. an increase in student population density also witnessed an increase in JMB arrestees).

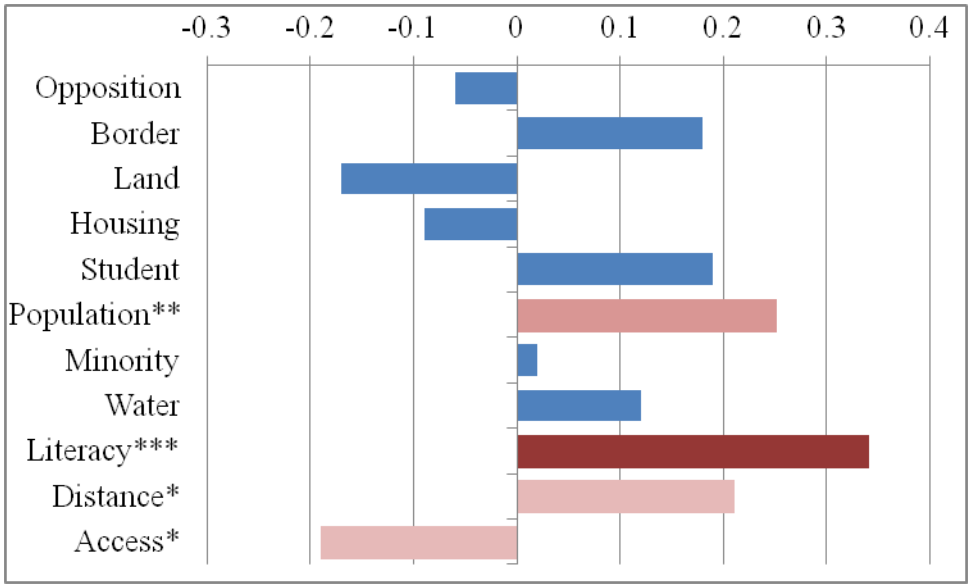

Figure 4.3 Spearman's rho correlation coefficients with JMB arrestees.
Note: *** 95% confidence, ** 90% confidence, * 85% confidence

Figure 4.3, which presents the results of Spearman's rank correlation coefficient analysis, shows that there is potentially only one significant variable relating to arrestee concentration, the growth rate of female literacy between the 1991 and 2001 censuses (X9). The relationship is significant at the 95% confidence level (p-value=.01). Moreover, the coefficient is relatively strong (.34) and positive. This indicates that as the growth rate of female literacy *increased* (meaning that literacy rates grew faster in some areas than others) it correlated with larger numbers of arrestees and, presumably, a larger number of recruits for the JMB. This is an unexpected result as we would expect the number of JMB arrestees to be lower in areas associated with stronger human development. However, one possible interpretation of the positive correlation between female literacy growth and JMB arrestees is that the arrestees are reacting to human development, which is upsetting the status quo.

The Spearman's rho analysis also suggests other variables may be significant in explaining the variation of JMB arrestees. Population density (X6) has a weaker correlation (0.25) and is significant at 90% confidence (p-value=.07). Two other variables are also significant at 85% confidence distance to Dhaka (X10, p-value=.13) and access to political capitals (X11, p-value=.15). Finally, two other variables are significant at 80% confidence border adjacency (X2, p-value=.18) and student density (X5, p-value=.17). However, these variables have a fairly weak relationship with the JMB arrestees variables, a coefficient correlation of less than 0.20.

Not shown in the table is the relationship among the independent variables. Considering that many of these variables are measuring the same factor (such as the political or demographic factor), there are some variables that have a strong relationship. The strongest is between student and population density, which are correlated positively

(coefficient=.82, p-value<.01). When variables are strongly correlated with one another there is a greater likelihood that they are measuring the same thing and less likelihood that one of them will be included in a regression model. Other strong correlations are between border adjacency and female literacy growth and distance to Dhaka (both coefficients > .50, and p-value <.01) and between improved water sources (X8) and poor housing (X4) and student density (X5) with both coefficients over .50, indicating a strong relationship and statistically significant at 95% confidence.

While correlation analysis is useful, regression analysis is one step further. The former explores the relationships on a one-to-one basis, while regressions attempt to provide the best fit equation that explains the variance in the dependent variable. In the next section I will conduct a conduct a full multiple regression using all eleven variables and a subsequent select multiple regression using only the most significant variables.

Full and Select Multiple Regression Models

I conducted each regression in SPSS. My null hypothesis (H_0) is that the 11 independent variables are not significant in predicting the numbers of arrestees by district. My alternative hypothesis (H_1) is that political opposition, adjacency to international borders, land ownership, housing type, student and population density, presence of minority religion adherents, water source, growth in female literacy, distance and access to capitals are significant in predicting the dependent variable. Each regression seeks to understand the relationship between the variables for the 57 districts which recorded at least one arrest.

Initially, I conducted two multiple regressions. The first was a full multiple regression with all 11 independent variables against the JMB arrestees. The second was a

select multiple regression using only the most significant independent variables. While including all variables will yield a model of the highest explanatory power, in this case with an R square of almost 12%, the full multiple regression model itself is insignificant with an F-score of 0.55 (and a p-value of 0.86). This probability value indicates that there is an 86% chance of committing a Type-I error, that is rejecting the null hypothesis even though it is true. The null hypothesis is that the model is statistically insignificant. Despite the lack of model skill, there were interesting developments among the individual variables. First, the significance of minority religions (X7) improved from the Spearman's rho correlation, falling from a p-value of 0.91 to 0.35. Second, the growth rate of female literacy (X9) maintained its positive correlation with the dependent variable and is still the most significant explanatory variable.

The select multiple regression with the five selected variables (population density, minority religions, female literacy growth, distance to Dhaka, and access to political capitals) is an improvement over the all variable model. The model is slightly less effective with an R square of about 10%. From the all variable model, I have eliminated now more than half of the variables. Importantly, the adjusted R square (the generalizability of the model) is positive, whereas in the previous model it was negative. Though the overall model's significance improved (F-score=1.07), it is still well outside 90% confidence with a p-value of 0.39. Coefficient analysis shows similar findings to the previous model. However, female literacy growth has become significant at the 85% confidence interval. Further, population density seems to be less significant now than in the previous model indicating that we may be able to remove it entirely from future models. Because of the lack of significant global models from the full and select multiple regression, in the next

section I will conduct a stepwise regression, which allows the software package to build a regression model utilizing all 11 variables.

Stepwise Regression Analysis

As was expected from the previous models, the only variable entered into the stepwise regression model by SPSS was the female literacy growth variable (X9). I used a F-probability of 0.10 or less for a variable to enter the model and a F-probability of .15 to remove that variable. These criteria stipulate that a variable enters the model when it is significant at the 90% confidence level. The remaining variables are evaluated for their probability to contribute to explaining the variance in arrestee. If another variable is significant at the 90% confidence level it is also included, but if an earlier variable becomes insignificant (falling below the 85% confidence level) than it is removed from the model.

The stepwise regression model, which attempted to create the best model utilizing the 11 independent variables, only kept a single variable (female literacy growth, Table 4.4). The model's R-square is lowest among the three models (full, select, and stepwise) with a score about 6%. However, the adjusted R-square is a measure of the generalizability of the model and is the highest among the three at about 5%. Most importantly, the overall stepwise regression model is significant with an F-score of 3.49) and a p-value of 0.07, which is within the 90% confidence interval. Among the three models, the stepwise regression yielded the most significant model in explaining the number of JMB arrestees in Bangladesh.

Table 4.4 Coefficients within the stepwise regression model.

Model		Coefficient (B)	t	Sig.	90% CI Lower Bound	90% CI Upper Bound
1	(Constant)	2.43	0.38	0.70	-8.13	12.98
	Literacy	1.55	1.87	0.07	0.16	2.94

The model equation is provided in Table 4.4 and is interpreted as *Y=2.43 + 1.55(X9)*, where Y equals the number of arrestees from a particular district and X9 corresponds to the growth rate in female literacy for that district. This coefficient indicates that a percentage point increase in the decadal growth rate of female literacy corresponds with an increase of between one and two arrestees from that district (significant at 90% confidence). However, the 90% confidence interval for the coefficient indicates that the coefficient may be as low as 0.16 or as high as 2.9. That this confidence interval does not include a negative is encouraging in that there seems to be a positive correlation between the growth rates in female literacy and JMB arrestees. Finally, our model does not violate the multicollinearity assumption of the independent variables (since there is a single independent variable).

We can conduct similar analysis on a smaller number of districts. The previous section identified 20 districts that comprised statistical significant clusters in hot spots and cold spots. Figure 4.4 presents these regions based on the Getis-Ord GI* statistic. The districts are color coded as follows: dark blue (significant cold spot at 95% confidence), light blue (significant cold spot at 90% confidence), light red (significant hot spot at 90% confidence), and dark red (significant hot spot at 95% confidence). In the next section I will conduct stepwise regressions of the 11 independent variables against JMB arrestees in order to examine the relationships between the variables in these smaller areas.

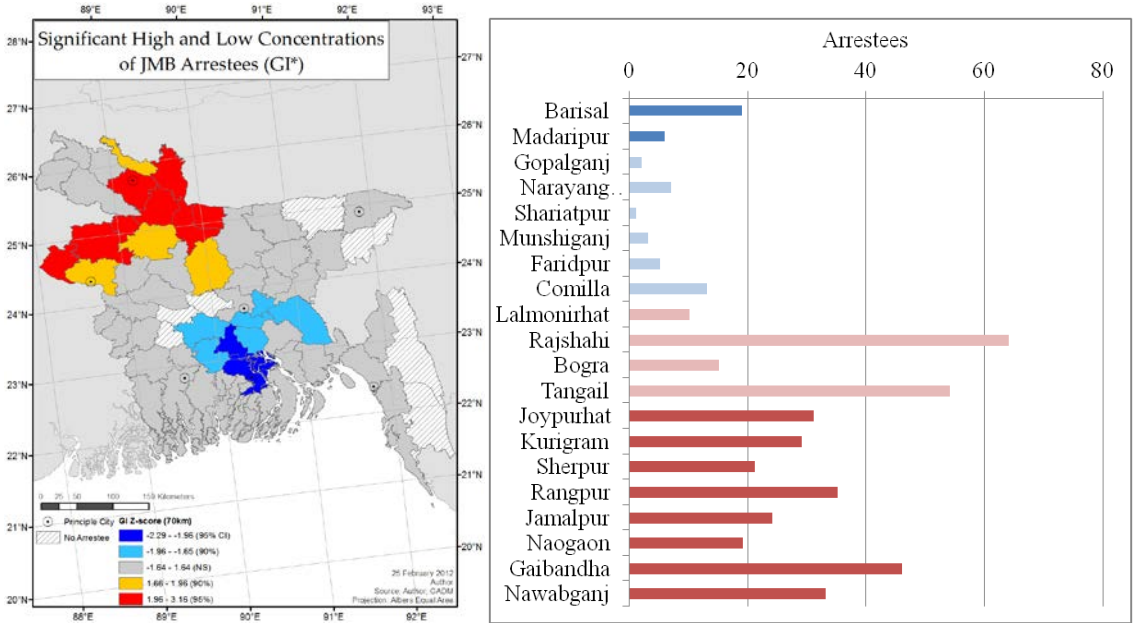

Figure 4.4 Significant Hot and Cold Districts of JMB arrestees.

Inter-Regional (Hot and Cold Spot) Analysis

The first stepwise regression evaluates all 20 districts together. Like the previous analysis the dependent variable is JMB arrestees and the 11 independent variables remain the same. This analysis seeks to understand the differences between the hot spot, where the JMB arrestees are concentrated, and the cold spot, where they are less concentrated.

The only variable entered into the regression model was the distance variable. However, unlike in the previous tests, the confidence interval in this test is higher. I used a probability of 0.05 (95% confidence) for a variable to enter the model and a 0.10 (90%) as criteria to exit the model. Thus, we may have higher confidence in this model's results. The model itself also has increased explanatory power and generalizability in comparison to the previous regression models. This model has an R-square of 0.24 and adjusted R-square of 0.19. In addition, the model is also significant at 95% confidence (F-score=5.25, p-value=0.04).

The model itself is given by the equation, *Y=5.95 + 0.12(X10)*, where Y equals the number of arrestees from a particular district and X10 corresponds to the distance from the Dhaka district centroid in kilometers. This coefficient (t-statistic=2.36, p-value=0.03) indicates that for every one kilometer increase in distance from Dhaka there is an increase of 0.1 arrestee. In other words, every ten km. increase correlates with an increase of one arrestee from a district at that distance. The 95% confidence interval indicates that the coefficient may be as low as 0.01 and as high as 0.22. The lower bound interval suggests that the number of arrestees would increase by one for every 100 kilometers. The upper bound interval suggests that were would be an increase of two arrestees for every ten kilometers. Finally, this model does not violate the multicollinearity assumption of the independent variables (since there is a single independent variable).

The next stepwise regression model explains the relationship between the independent variables and arrestees for the 12 districts within the "hot spot."

Intra-Regional Analysis: Hot Spot

Stepwise regression analysis of the 12 hotspot districts (Bogra, Gaibandha, Joypurhat, Jamalpur, Kurigram, Lalmonirhat, Naogaon, Nawabganj, Rajshahi, Rangpur, Sherpur, and Tangail) reveals growth in female literacy as having the expected negative sign and appears to disagree with our earlier findings in the all-district dataset. It implies higher rates of female literacy growth correlates with *less* arrestees in a district. However, I should caveat this with the reiteration that these districts already have high numbers of arrestees. Only growth rates of female literacy were entered in the stepwise regression model using the same criteria as the Bangladesh-wide stepwise regression model (i.e. 0.10 probability of F to enter, 0.15 probability of F to exit). Overall, the final model is

significant at 90% confidence (F-score=4.83, p-value=0.05). The explanatory power and generalizability of this model are stronger than the previous model's with an R-square of 0.33 and adjusted R-square of 0.26, respectively.

The model equation is, *Y=78.12 – 5.25(X9)*, where Y equals the number of arrestees from a particular district and X9 corresponds to growth in female literacy rates. This coefficient (t-statistic=-2.2, p-value=0.05) indicates that for every percentage point increase in the growth rate of female literacy (between 1991 and 2001) there was a decrease in 5 arrestees in the "hot spot" districts. The 90% confidence interval indicates that the coefficient may be as low as -0.92 and as high as -9.58. These intervals correspond to a decrease in one or about ten arrestees for every percentage point increase, respectively. Finally, this model does not violate the multicollinearity assumption of the independent variables (since there is a single independent variable). The final model explains the relationship between the independent variables and arrestees for the 8 districts within the "cold spot."

Intra-Regional Analysis: Cold Spot

The cold spot region is similarly based on the Getis-Ord GI* analysis from earlier. There are eight districts in this region, Barisal, Comilla, Faridpur, Gopalgonj, Madaripur, Munshigonj, Naray Angonj, and Shariatpur. I conducted a stepwise regression utilizing all 11 variables against the JMB arrestees and used an F-probability to enter of 0.10 and F-probability of 0.15 to exit the model. These probabilities correspond to 90% and 85% confidence levels respectively.

The stepwise regression resulted in three variables entering the final model. The initial variable entered was distance from Dhaka. Following this variable, the regression

found that political opposition was significant at the 90% confidence level. Evaluating the model with both distance to Dhaka and political opposition, the regression subsequently found that growth rates in female literacy was also significant at the 90% confidence level. Thus, the analysis found that distance was the best explanatory variable, since it is unlikely that a single variable will completely explain a phenomenon (especially one involving people), the remaining variance was best explained by the measurement of political opposition.

The change in the R-square as the stepwise regression continued is indicative of the final model's strength. By the third iteration (which includes the distance, opposition and literacy variables) the R-square was 0.91, suggesting that those three variables accounted for about 90% of the total variance in the number of arrestees across the eight districts. In addition, the adjusted R-square (the generalizability of the model) was 0.84, suggesting that this model has high applicability with regards to the dataset. Importantly, the global significance of the model (judged by the F-test) increased with the addition of each subsequent variable. The initial iteration (distance only) was significant at the 90% confidence level (F=4.86, p-value=.07), the second iteration (including opposition) was significant at the 95% confidence level (F=7.90, p-value=0.03), and the final model (including literacy) was also significant at the 95% confidence level (F=12.84, p-value=.02).

The final model's equation is $Y=-4.80 + 0.17 (X10) + 0.24(X1)-1.24(X9)$, where Y is the number of arrestees predicted, X10 is the distance from the Dhaka centroid in kilometers, X1 is the proportion of total votes for the BNP and JIB during the 1996 election, and X9 is the growth rate of female literacy between 1991 and 2001. The

coefficients predict that for every kilometer a district centroid is from Dhaka there may be an increase of 0.2 arrestees, or every 10 kilometers an increase of 2 arrestees. Similarly for every 10 percentage point increase in the proportion of votes received by the political opposition 2 arrestees are predicted. Finally, the last coefficient predicts that for every percentage point increase in the growth rate of female literacy one less arrestee is expected. These variables do not violate the assumption of multicollinearity as each tolerance statistic is greater than 0.2 and the VIF statistic is less than 10, thus the variables are unlikely to be accounting for the same variations (correlated with each other). The 90% confidence interval indicates that the distance coefficient could be as high as 0.26 (about 3 arrestees every 10 km.) or as low as 0.09 (about 1 every 10 km.), the political opposition is between 0.38 (4 arrestees per 10 percentage point increase) and 0.09 (1 arrestee per 10 percentage point increase), and literacy is between -2.30 (2 arrestees less per 1 percentage point increase) and -0.18 (1 arrestee less per 10 percentage point increase).

Summary

I began this chapter with a brief description of the basic statistics of the dataset and confirmed the nonparametric nature of the data. Because of this nonparametric dataset I subsequently utilize nonparametric tests, rather than parametric tests, in my statistical analysis.

I answered my first research question, confirming that there is a spatial concentration of JMB arrestees in Bangladesh. I confirmed this question by using a combination of spatial and spatially-driven statistical analysis. First, I utilized Moran's I to discover that there was a global index of spatial autocorrelation. Subsequently, I utilized Getis-Ord GI* to delineate where the significant cluster of JMB arrestees occurred at the

district level. The Getis-Ord GI* resulted in the identification of 20 districts that were distributed into 12 “hot spot” districts, where there were more JMB arrestees than predicted, and eight “cold spot” district, where there were less JMB arrestees than expected (at 95/90% confidence). I also generally confirmed these findings through map visualization and a combination of the Kruskal-Wallis nonparametric test and a series of Mann-Whitney U tests to identify regions in Bangladesh where there are significant differences in the number of arrestees.

Then I attempted to answer my second research question, which was to identify significant factors explaining the spatial concentrations of JMB arrestees. The full and select multiple regression models provided insignificant results and almost no model skill. The subsequent stepwise regression provided a significant model (at 90% confidence) and one explanatory variable, growth rate of female literacy from 1991 to 2001, but had low explanatory power. Interestingly the female literacy variable was positively correlated with JMB arrestees, indicating that acceleration in female literacy growth corresponded with higher numbers of JMB arrestees from that district.

I then conducted stepwise regressions on the 20 districts distributed between the hot and cold spots. The first stepwise model focused on explaining the relationships between arrestees and the independent variables between the two (hot and cold) regions. This model, significant at 95% confidence, had good explanatory power and found that distance to Dhaka was the best explanatory variable of the differences in arrestees between the two regions.

Finally, I conducted two additional stepwise regressions on the hot and cold spots themselves. The hot spot stepwise regression yielded a model significant at 90%

confidence that also included female literacy growth as the only explanatory variable. However unlike the Bangladesh-wide stepwise regression model, the hot spot regression found female literacy growth as *negatively* correlated with JMB arrestees. It suggests that the acceleration of female literacy growth corresponded with *fewer* JMB arrestees. Likewise, the cold spot stepwise regression also revealed a negative association between female literacy growth and JMB arrestees. In addition the final model for this region also found that distance to Dhaka and political opposition (measured as the ratio of votes for opposition political parties) were significant in explaining variation in arrestees within the region. The R-square and adjusted R-square of this final model were particularly high, over 90% and 80% respectively.

The next chapter discusses these results and compares them with others' findings. In addition, I discuss the limitations of my methodology and my conclusions.

Chapter 5: Handling Insurgency

Overall, I believe that distance from the capital district of Dhaka is the strongest explanatory variable for the numbers of *Jamaat-ul Mujahideen fi balad al-Bengal* (JMB) arrestees, especially in regards to the two statistically significant regions identified in the previous chapter. More ambiguous is the relationship between female literacy growth rates and JMB arrestees. The all-data analysis suggests that female literacy growth rates and JMB arrestees are positively correlated while the hot and cold spot analyses suggested negative correlations. The bi-regional regression noted a low, if not uncorrelated, correlation between the two variables. Despite this uncertainty, the scale of analysis is important in discussing conflict. Between the two regions, distance was the best explanatory variable. Within the regions, female literacy growth rates (and other variables) were the most effective explanatory variables of the variance in arrestees.

The results of the preceding analysis provide additional evidence in support of findings from other scholars of civil conflict. In particular, the importance of distance in explaining the concentration of JMB recruits at the sub-country level fits with Buhaug and Rod's (2006) findings concerning the length and intensity of African civil wars, where conflicts located in the periphery of the capital take longer to resolve and are more virulent. Hegre and Raleigh (2007) also found that distance was moderately associated with a risk of conflict (and that risk increased as population sizes increased). This study of insurgent recruits relates to these studies through the underlying conflict environment. Increasing distance to the capital not only raises the risk of conflict, but it also plays a role in sustaining it by creating an environment conducive to recruiting insurgents. I believe that

the best explanation for the importance of distance in spatial concentrations of recruits is the state capacity and weakness argument espoused by Hegre (2001), Brown (2005), Fearon and Laitin (2003), and Arjona and Kalyvas (2008). The state capacity and weakness argument asserts that conflict and insurgent recruits are more likely to appear when the state lacks the capacity to police itself or if it is too weak to do so effectively.

An examination of supplementary works indicates that other indicators of state weakness, in addition to the physical distance to the capital, are present in the Bangladeshi geographic and historical contexts. Hegre (2001) found that states in flux between total democracy and total autocracy were at a greater risk for civil war. Based on 1995 data, Hegre's dataset probably included most of Western Europe and the United States as being fully democratic while states like North Korea were fully autocratic. Given the Bangladeshi state's youthful age (independent in 1971) and turbulent politics since then (two military cops and military-backed caretaker government), I believe that Bangladesh fits the description of a transitioning state. The Freedom House assessed that Bangladesh was on a downward trend in its 2012 *Freedom in the World* report, while previously assessing the country as increasing its freedom index between 2008 and 2011 (rated as partially free over that time).

Brown (2005) also noted that a lack of legitimacy is one indicator of a "weak state" that leads to ethnic and internal conflicts. In Bangladesh, Ali Riaz (2004) traces the changing political landscape following the secular revolution led by Sheikh Mujibur Rahman in 1971. He identifies the reemergence of Islam as a political symbol in public life since the revolution and ties its growth to political expediency, a lack of ideological differentiation, and crises of legitimacy involving the main political parties, the Awami

League and the Bangladesh Nationalist Party (BNP). Fearon and Laitin (2003) identified "instability" as one indicator of state weakness. At the state-wide level Bangladesh has been historically unstable since its creation in 1971. Riaz (2004) notes the rise of military autocrats in 1975 and 1983 and their usage of Islam to build legitimacy for their regimes. I believe this historic instability is rooted, not only in the Bangladeshi state's identity crisis between being primarily Bengali or Muslim, but also in the region's previous partitions by the British in 1905 and the reunification in 1912. In the introduction, I noted that these geopolitical changes (including the 1947 partition) politicized one aspect of a person's identity, their religion. Accepting these as environmental indicators of state weakness, this study verifies the findings of Arjona and Kalyvas' (2008) assertion that low levels of state capacity are important explainers of insurgent recruitment at the individual-level.

The other significant finding from the regression analyses was the relationship between the decadal growth rate in female literacy and spatial concentrations of JMB recruits. The all data analysis found a weak, but positive, relationship between the two variables indicating that when the decadal growth rate was higher, JMB recruit concentrations were also higher. One arguable interpretation of this particular human development measurement is the perceived growth in women's opportunities represented by better education (though whether these opportunities actually exist and women have access to them is another discussion entirely). In this interpretation, we find that recruits are potentially reacting to quickly changing social relations at home and within their communities. Hossain (2007:22) identifies socially "deviant" persons, primarily women and women activists, as a target of Islamist radicalizers. She finds that "the status, physical appearance, or behavior of women that fails to conform to the radicalizers' view of what is

acceptable is labeled deviant." While Hossain acknowledges that the "traditional" place of women in Bengali society was not limited to the home, she notes that nongovernmental organizations and women activists are regular targets of movements like the JMB. Ali Riaz (2004) offers important potential insights to the radicalizers' view. In his study, he finds that *fatwas* (edicts pronounced by religious leaders) transformed from rulings on individual behavior, often tied to issues of morality (such as adultery and divorce), to regulating organizations and groups.

Whether to protect the interests of nongovernmental organizations and women, or to safeguard its own judicial authority Bangladesh's highest court declared *fatwas* "illegal" in 2001 but stayed the decision indefinitely following violent protests against the decision that resulted in loss of life (Riaz, 2004). The confessional statement of Mufti Abdul Hannan to the Dhaka District Magistrates Court in November 2006 noted that the Awami League government (which came to power in 1996) was blamed for the ban. More importantly, Hannan alleged that many Bangladeshis believed the Awami League was anti-Islam and as an agent of India, attempted to expunge the religion from the state. Hannan, who was one leader of the violent insurgent group Harakt-ul Jihad al-Islami Bangladesh (HUJI-B), and other HUJI-B leaders agreed to resist the Awami League through attacks against the Awami League party leadership and activists in order to save the country and Islam (ICG 2006).

This demonstrates one individual-level motivation for joining an insurgency, the thought of preserving the country and the religion. As I noted in the introduction, the process of politicizing one aspect of the Bangladeshi identity has been ongoing since at least the early 1900s. Interestingly, Hannan held the center-left political party (the Awami

League) partially responsible for the threat to Bangladesh and Islam. Despite the Awami League's more secular credentials, this political party and the country's founder, Sheikh Mujibur Rahman, started Bangladesh on the Islamist path.

However within the "hot" and "cold" areas of JMB arrestees I found the opposite phenomenon, the faster women's literacy grew between 1991 and 2001, the less arrestees claimed that district as home. This implies that within these two regions improvements in the human development outcomes of the population of the area between 1991 and 2001 correlated with a statistically significant decrease in the number of individuals who were subsequently arrested after 2001 as part of the violent JMB insurgency. There is a potential parallel between this finding and that of Robinson (2010). In examining a range of factors (including various social, economic, and political measures) in a large number of countries against terrorist incidents, he found that the variable for women in the workforce was a significant negative predictor of terrorist attacks. He proposed three possible explanations for this outcome that women were more likely to fight for equality and equity for other disadvantaged groups (since women are normally disadvantaged) thereby reducing the incentive (greed or grievance) to engage in terrorism. He also suggests that women's gaining greater control over family resources serves as an impetus for "more docile and less aggressive forms of male or female political identities" (Robinson 2010, 750). Finally, he hypothesizes that women's entry into the workforce serves to diversify labor, which facilitates the growth of more tolerant attitudes.

The growth in women's literacy is probably linked to these observations in that one assumes that more educated women leads to more employed women (assuming that there are jobs available to absorb them and people are willing to hire them). At the individual-

level, the family and society may also confer greater independence and more equal standing to more educated women.

In an attempt to reconcile these two disparate findings, a positive association at the national-level and a negative correlation at the local, I would venture that overall quicker growth rates in female literacy, probably upset the "established" social norms, especially those associated with power and patriarchy. Perhaps initially this upset promotes a sense of grievance among some individuals, but these grievances lessen over time. Gauging this temporal effect is observable in a study that could examine the dates of when recruits joined a movement and when an NGO (if any) began operating in their area. Eventually, quicker growth rates may imply a leveling of the field for both men and women, allowing women access to more resources, more power, and a growth in tolerance.

These findings, female literacy growth and distance to the capital, also illustrate the importance of scale; different factors are likely to be significant at different scales. Statistical analysis of the same independent and dependent variables identified different significant factors at the inter-regional level (between the high and low concentrations of arrestees) and the intra-regional level (within the high and low concentrations, independently). Between the two regions, distance to the capital city (the physical geographic factor) was the most significant explanation of why higher than average arrestees clustered in northern Bangladesh compared to the area south of Dhaka. At this scale, my results suggest that there is some truth to the state capacity argument.

Dhaka is a classic example of the primate city, with economic and political resources concentrated in the capital; the state is at its strongest in this area. As distance from the capital increases, fewer resources are available to maintain the state: roads are less

paved, salaries of security personnel are lower, education and economic opportunities are more infrequent, and corruption is more tolerated. In terms of recruitment for an insurgency, this result suggests that whatever individual factors ultimately motivate someone to join the JMB insurgency, the conflict environment is more conducive to joining further from the capital than closer to it.

Examining the English-language confessional statements of six JMB arrestees (provided by the International Crisis Group) identifies some cross-cutting themes at the individual-level. One theme is the distinction the individuals make between Jamaat-e-Islami Bangladesh (JIB) politics and the JMB's politics. For instance Shaykh Abdur Rahman, the head of the JMB until his arrest in 2006 and execution in 2007, indicated that he reconstituted the JMB because of his disagreement with the JIB's participation in the democratic political process in order to achieve Islamic rule in Bangladesh (ICG 2006b).[1] One leader, Siddiqul Islam (infamously known as *Bangla Bhai*) indicated that he was a member of the *Islami Chhatra Shibir* (ICS, the JIB's student wing) but the political party lost his support because it "comprised on female leadership in national politics" in addition to their participating in democratic politics (ICG 2006c, 2).

Abdul Sattar Molla, a member of the JMB, also raised the issue of the JIB compromising on female leadership in his confession. He noted that Delwar Hossain Sayeedi, one of the most important leaders of the JIB party, "would state that women leadership [sic] is *haram* [forbidden under Islamic law] and there can be no laws on Allah's land but Allah's law" (ICG 2005, 4). However, following the JIB's entrance into a

[1] According to Rahman the JMB organization had been founded during the British colonial period and had lied dormant until he was "officially" handed the emirship in 1998.

governing coalition with the BNP in 2001, Molla noted that Sayeedi's "sermons" did not match his earlier statements, causing Molla to become distrustful of Sayeedi (and presumably the JIB). However, these statements on women's leadership in national politics (a potential acknowledgement of the longtime rivalry between the BNP's Khaleda Zia and the Awami League's Sheikh Hasina Wajed) would not apply to the stronger negative correlations between the decadal growth rate in female literacy and arrestees within the hot and cold spots. In addition the statements may be more indicative of frustration with the current political system, which scholars partially characterize as subject to widespread corruption. Hossain (2007, 17) acknowledges that corruption provided an opening for the political ideology of Islamism, which promised "a government free of corruption, one whose divinely mandated rules were not subject to modification…by human legislators." That JIB officials were not above charges of corruption, symbolizing the JIB's subversion into the democratic politics represented by "women's leadership," may have been the outcome that disillusioned many (such as Rahman, Islam, and Molla). A second theme evident in the court documents is the importance of educational and religious places to the JMB movement.

In a 2010 report, the ICG noted that the JMB relied on the extensive network of *Ahle Hadith*[2] mosques and madrassas in Bangladesh, particularly in the northwest. Furthermore, as the organization grew, it setup its own network of madrassas. According to an interview with a full-time, *ehsar*, member of the JMB in July 2009, one of these madrassas was located in a poor area of Dhaka, another in a JMB stronghold in Naogaon district, another was located in Bangladesh's southwest when the movement was spreading

[2] *Ahle Hadith* is a Islamic social movement that is alternatively described as revivalist or puritanical.

there, the fourth was in the home district of the founder of the movement (ICG 2010). McColl (1975) hypothesized that a key population group for insurgents are students. But as Kent's (1993) study of the Shining Path insurgency in Peru also demonstrates the importance of educational institutions as a place of recruiting. He notes in the 1960s that the group focused its efforts on recruiting within the country's universities, and eventually moved to "relatively inaccessible areas of the countryside, where it created 'popular schools'" (Kent 1993, 442). Incidentally, Kent's study also provides support to the idea of state capacity in the implication that the state may be unable to regulate the schools due to the inaccessibility of the area and the Shining Path's activities, which resulted in the expulsion of state representatives (Kent 1993).

Finally, there is one other important caveat worth mentioning. Hossain (2007) acknowledged that one of the advantages enjoyed by religious schools in Bangladesh, in contrast to government-funded schools, is that the former offer free lunch while the latter do not. Foreign groups, including some located in the Arabian Gulf states, fund many of these religious schools. One group, the Revival of Islamic Heritage Society (RIHS, based in Kuwait) played a role in the radicalization of Abdur Rahman and had ties to one outspoken proponent of an Islamist Bangladeshi, Asadullah Ghalib. The Bangladeshi government deported several officials of the RIHS under suspicion of their involvement with financing the JMB's activities (ICG 2010).

There is also the importance of human connections. Abdur Rahman notes in his confessional statement that the principal of one of his *madrassas* from his youth was the father-in-law of a leader within the *Ahle Hadith* movement and acquainted with his own father. Abdur Rahman evidently began to radicalize while reading books provided by an

acquaintance, the Director of Revival of Islamic Heritage Society (RIHS).[3] Abdur Rahman met the director through his sons, who were studying with the director's nephew at a madrasa in Jatrabadi. Finally Abdur Rahman noted, while reorganizing the JMB, that his "Shura [governing body] members travelled to various mosques and madrassas across Northern Bangladesh, namely Rajshahi, Rangpur, Dinajpur, Bogra and Pabna [districts] to expound the need for Jihad-based discussions and training" (ICG 2006, 4). All of the judicial statements note the importance of the *Ahle Hadith* movement. But in particular, Abdul Sattar Molla (2005) noted that one activity undertaken by the JMB was to attempt to convert people to the *Ahle Hadith* school and to get them to pray more often. On the other hand, Abul Kalam (2005b) notes that he was converted to the *Ahle Hadith* school of thought by a sister's husband in 1996. The remainder of this chapter is devoted to my discussion of the limitations of this dataset, implications of these possible errors, and ways in mitigating them.

Why We Care about the JMB and Bangladesh

Human development may upset the local balance in certain areas to such a degree that it spurs individuals to join violent organizations that seek to return the area to the older status quo. However, the study provides strong evidence that as development takes hold, and grows more quickly, there is less impetus to join a violent movement. While the relationship between development and violent extremism is complex, it would be incorrect to assert that development prevents violent conflict. However, I would argue that development eventually shifts the environment to a situation that is less conducive to

[3] RIHS was banned sometime after 2001 under suspicion of its support for its alleged support of Islamist insurgents.

recruitment for insurgencies. Ultimately, this environmental shift arrives at situation that is less conducive to joining a violent extremist movement. The shift towards a less conducive environment for recruitment is critical for policy. Considering that recruitment is an important activity at all four phases of Moss's (1971) insurgency framework, my study suggests that addressing certain environmental factors could lead to lower recruitment for the JMB. This outcome is important not only for the conflict in Bangladesh but for counterinsurgency doctrine in general, particularly for the U.S.

For Bangladesh, the apparent importance in women's development reminds us that insurgency is not a purely military problem but a political one. Similarly, Lacquement (2011) argues that improving the chances of counterinsurgency's success lies in well-integrated civil and military operations. My research suggests, at least within the hot and cold spots of JMB recruits, that a civil program aimed at expanding women's literacy could potentially lower the number of recruits for the JMB insurgency. However my research also suggests that the issue of women's literacy may well be part of the problem *and* the solution to the JMB insurgency. Thus, development projects must be undertaken with the understanding that they may initially increase the risk of spurring local instability. Effective use of state power, primarily policing, is necessary if these development projects are to work in Bangladesh. The notion of integrating effective state power and development points to the necessity of nongovernmental and international governmental organizations working more closely with the national and local governments to develop plans that address security and development issues in tandem. Any policy or program that focuses solely on military (or civil) matters is doomed to fail.

For the United States, the JMB insurgency of Bangladesh is of concern because of its potential to generate violence that spills over the border, perhaps targeting U.S. interests. There is already evidence of this in the case of Afghanistan and Iraq. Kilcullen (2009) presents evidence that transnational terrorists, represented by al-Qaeda, are able to harness and co-opt local grievances in order to generate "accidental guerrillas," local fighters who may care nothing for the transnational agenda but find common cause with transnational fighters on local issues of concern. Importantly some believe that U.S. problems won't cease with a removal of U.S. troops from these countries, Metz (2011) lays out why the U.S. should be concerned with internal conflict citing the destabilization of regions, reduced access to markets, and the potential for transnational crime and terrorism. Metz also proposes that women's empowerment as part of a U.S. counterinsurgency strategy, this study agrees with that notion.

Given these considerations, the U.S. and Bangladeshi governments should agree that the JMB is a poor outcome. While certain Islamic scholars and Islamist politicians may argue the benefit of a state rooted in Islamic law, the JMB's brutal methods to arrive at this end state brook no argument. Any bombings and killings that target the innocent, their only guilt being that they benefit from or are employed by the state, is outside the international legal framework exemplified by the Geneva Conventions and various other international instruments such as the Universal Declaration of Human Rights. Some may argue that this is covenant between states and that the violence employed by the state (which is covered by various conventions) is different only from the violence employed by organizations like the JMB because the former has a monopoly upon that violence, which is only granted because of its existence. In other words, states are allowed to conduct bombings and killings

because they, and other states, legitimize and legalize their activities whereas extra-governmental organizations engage with illegal violence because they cannot legalize it themselves. There is some truth to this and history is replete with examples of insurgent, rebel, and revolutionary movements that are victorious and subsequently freed from accusations of their illegality. In the case of Bangladesh, two military dictatorships begun with the killing of the previous head of state, General Ziaur Rahman took over from Sheikh Mujibur Rahman, and General Hussain Ershad subsequently took power from General Rahman. Ershad, now a former general, is the leader of the fourth largest party in the state's parliament, the *Jatiyo Sangsad*, ahead of the Jatiya Party (national party) and has played the role of kingmaker to the two main parties, the Bangladesh Nationalist Party and the Awami League.

This chapter discussed my findings with regard to other qualitative studies. I have noted that the most significant explanatory variable between the significant concentration of arrestees and lack of arrestees was distance to Dhaka. I interpreted this as support for the state capacity and state weakness hypothesis that states that insurgencies and recruitment take place in areas where the state is weakest. Another significant finding is the complex relationship that women's development has with JMB recruitment. On the one hand, scholars have argued that development has started to tip the rural balance of power in favor of more marginalized groups. On the other, some have noted that women's empowerment leads to less violence as attitudes towards marginalized groups change and women gain greater control over family outcomes. In either case, the truth may lie in the timing of development and insurgency. Perhaps the risk is greatest in the beginning of the development projects, when the status quo begins to change and uncertainty over the future

becomes a concern. Later, as some individuals become familiar with and accustomed to changing society, anxiety over the future may lessen. In the final chapter, I provide additional concluding remarks, suggestions for future research, and this study's implications for geographic research on war (GROW).

Chapter 6: Conclusions

It is clear that the discipline of Geography has an important role to play in the study of insurgency, as this research further confirms. I noted at the outset that the economic greed and political grievances dichotomy has dominated our understanding of why people rebel for the past forty to fifty years. Only in the past couple of decades has that conversation expanded to include other voices. Geography is a relatively late entrant to this conversation, yet its influence has been noteworthy. This is unsurprising since activities such as insurgency, rebellion, and war are an inherently geographic undertaking since they are set in, and ultimately seek to control, geographical space. Violent conflict, whether between states, governments, organizations, and individuals, is ultimately a contest for geographic space. Whether seeking to control the strategic or valuable resources of a region or to supplant an existing authority and place a new framework in its place one must first seize and control the geographic area and its resident peoples.

My results demonstrate the continued need for geographers to conduct research on conflict. In particular, the inter-regional model shows that state capacity is partially due to a state's geography. A developing state, like Bangladesh, is best able to project its power and influence close to its capital. Future geographic studies of the state capacity argument could focus on developing a model of state capacity in developing countries where state power decreases as distance increases. Additionally, state capacity may be strong along principal road ways or some provincial capitals may act as secondary nodes of state power, both of these features could project a developing state's coercive and cooperative power into the surrounding area. In the context of my study, further research is needed to ascertain how

the state projects itself more powerfully just south of Dhaka but poorly in the northern areas.

The negative correlation between of human development, specifically women's literacy, and JMB arrestees suggests that increasing educational, economic, and life opportunities for women positively influences the physical security of an area. I believe that these results are significant. While the positive correlation between women's literacy growth and JMB arrestees is tenuous at the countrywide level, the negative correlation at the local level is not. Thus, while the JMB utilizes the activities of non-governmental organizations (NGOs) as a rallying point to spur recruitment and as a focal point for operations, the Bangladesh Rural Advancement Committee (BRAC) has been targeted by bombings and religious edicts, NGOs ultimately negatively affect the JMB movement.

However, there are two caveats I should mention. First the scope of this study; I examined "recruits" of a single insurgency in a single country, hence the results may not be applicable to another insurgent group in Bangladesh or another insurgency elsewhere. Repeating this study with a wholly different group in a radically different setting, for instance the Shining Path in Peru, would be a major step towards a more general theory of the conflict environment's influence on the recruitment process. For instance, growth rates of women's literacy may not have been an important environmental factor influencing their decision to join, whereas economic factors, such as unemployment may have had a stronger influence. Because of this, an expanded study, focusing on the JMB in Bangladesh but with additional information relating to the arrestees' level of membership in the JMB, should be undertaken. Second, all insurgent groups are not equivalent. As I stated in the introduction, I decided to study the JMB because of its almost singular focus on

Bangladesh, rather than international phenomena which partially drive other violent Islamist organizations, such as al-Qaeda. However, different factors in the conflict environment are likely to have the strongest influence on an individual's decision to join a domestically-oriented organization, like the JMB, than an internationally-oriented organization, like al-Qaeda. There are also organizations that straddle both orientations, such as the *Harkat-ul Jihad-al Islami* Bangladesh (HUJI-B) which was blamed on a 2004 bombing in Sylhet that injured a British diplomat while also working to establish an Islamic state in Bangladesh.

Ultimately, the decision to join an insurgent movement is an individual one. What I have outlined in this study is a methodology in which to measure the impact that the local conflict environment has on an individual's decision to join the movement. Theoretically, programs tailored to address the important factors identified in a similar study could reduce the numbers of recruits from that area. However, though these programs may be wildly successful at that task, it is doubtful that they will completely prevent any recruits from joining for the simple reason that program, or number of programs, could be complex enough to address the various stimuli from the international level, to the local level, to the familial level.

In terms of this study, there are two recommendations. First, the government of Bangladesh should make efforts to expand the capacity of the state outside the capital. While my study does not address how to expand the state, one effort is to begin concentrating state resources, such as police power, infrastructure, and development, to areas away from the capital. If the objective is to reduce the numbers of recruits for the JMB in particular a useful place to expend state resources are in the "hot spot" districts in

the northwest: Bogra, Gaibandha, Joypurhat, Jamalpur, Kurigram, Lalmonirhat, Naogaon, Nawabganj, Rajshahi, Rangpur, Sherpur, and Tangail.

Another effort is to address corruption, which will ensure a greater percentage of state resources actually reach the population groups that it is intended for, additionally, corruption may be one of the causative factors spurring recruitment for the JMB or other insurgent groups however additional research at the individual-level should focus on this hypothesis. Perhaps additional resources do not even need to be sent outside Dhaka if corruption is more rampant in its far hinterlands?

While opponents of state expansion will likely balk at expanding state resources, addressing corruption would probably be more palatable politically. However, this path is complicated when one asks those who benefit from corruption to police themselves. The second recommendation is to take a somewhat measured approach to human development activities. While at the national level it may seem to spur recruitment efforts, at a local scale it ultimately reduces the number of recruits especially when progressing faster. While additionally studies on the types of development that more strongly influences the conflict environment are necessary, this study suggests that in the JMB/Bangladesh case women's literacy is important. This is likely true for a large number of geographies.

Perhaps the most significant finding of this study is the intrinsic link between security and development. The study suggests that human development improvements at the local level are *negatively* associated with insurgent recruits. At the countrywide level, this study argues that a more effective use of state power is negatively associated with insurgent recruits. Both of these conclusions underscore the point that insurgency is as much a political problem as a military one. Thus, there can be no division between

"security projects" and "development projects," the state must undertake and coordinate both if the political goal is peace. I argue that an increase in development dollars for programs positively affecting women's literacy growth in areas of high rates of insurgent recruitment can have a significant influence on that recruitment. In addition, I argue that a more efficient use of state power at the countrywide level, for instance addressing corruption, can likewise have a positive effect on the recruitment of internal insurgents.

For Bangladesh and nongovernmental and international organizations, more coordination is needed between development projects and security operations. Organizations must conduct both operations simultaneously, or in concert, and with clear political goals in mind, for instance, arresting key recruiters of insurgent movements while addressing concerns in the social and political environment fueling recruitment. Bangladesh and other states must also project state power responsibly, i.e. free of corruption, in areas far from the capital. This requires significant investment of state resources away from the primate city.

In the United States, we must institutionalize the understanding that counterinsurgency is much more than a military problem, it is a political and social one. While counterinsurgency manuals like Field Manual 3-24 are an improvement, they fall short of what is needed, which is to expand doctrinal discussions of counterinsurgency to include political, economic, and social organizations. However, Lacquement (2011) notes that counterinsurgency is embedded in the U.S. as a military problem and would require a major paradigmatic shift in order to properly address it. Thus, a paradigmatic shift needs to occur. I argue that a more effective counterinsurgency strategy begins with human development programs, creating opportunities at the local level, and state development

programs, which raise the capacity of a developing state to police itself. Addressing this underlying conflict environment may ultimately limit the labor pool from which insurgencies sustain themselves.

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