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Information and Communication Technologies, Globalization and Terrorism

An empirical analysis of terrorist attacks around the world from 1991-2006

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Master in Information Systems
Submission date: August 2010
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Problem Description

The new wave of globalization backed by modern technologies is facing huge criticism. Pessimists of globalization argue that globalization supported by these new technologies is becoming the main cause of the growing terrorism. Based on an empirical analysis of terrorist attacks around the world from 1991 to 2006, I have conducted this study which shows us the real causes of terrorism. The study has also covered other areas like how terrorists are using Information and communication technologies for their operations? The use of information and communication technologies by terrorist outfits has been investigated with a special focus on the terrorist groups involved in Pakistan. The empirical analysis also shows us the role of Islamic terrorist groups and the main threats to the Western countries.

Assignment given: 17. January 2010
Supervisor: Eric Monteiro, IDI

Information and Communication Technologies, Globalization, and Terrorism

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around the world from 1991-2006

In the name of Allah Almighty, Most Gracious and Compassionate

Dedicated To,

All innocent people who lost their lives as a result of any type of terrorism.

Acknowledgement

Praises to Almighty Allah, Who gave me the ability and courage to complete this project.

I pay my humble regards to my co-supervisor Professor Indra De Soysa for his kind support and guidance whose personal interest in this project enabled me to solve most of the problems and without whose help, this thesis would not have been possible.

I am extremely thankful to Professor Eric Monteiro for supporting and encouraging me during the thesis.

I am very much grateful to Erin Miller of Global Terrorism Database for providing me the necessary data and guidance.

I want to pay very special thanks to my family and friends who kept me going all this while and throughout my career.

Izaz ul Haq

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Chapter 1 Introduction

In this chapter I will provide a brief introduction to the research topic by explaining the problem statement. I will also highlight the purpose of the research during this chapter. At the end of the chapter I will provide an overview of the rest of the chapters.

1.1 Study Background

In the past decade, globalization has become the most fashionable buzzword. Globalization has simply changed our world according to many because of the massive changes in communication technology. This strong wave of globalization is supposedly overcoming local economies, politics and cultures. There are many aspects which are driving globalization; for instance, the beginning of transnational trade, increase in the foreign investment and change in rules and regulations but the most obvious development in globalization has been the information and communication technology (ICT) revolution. Many argue that these forces are changing the world into a 'global village.' The modern communication technologies are used for every purpose, ranging from personal contact to doing complex businesses. In other words ICT is becoming more and more prevalent around the world.

Critics argue that globalization provides the basis for majority of our problems. They believe that globalization has driven our world to unipolarity. They further argue that westernization of the developing countries is creating discontent among many groups who are now beginning to resist. Steven Weber argues this in "how globalization went bad". According to him,

''A terrorist organization needs a story to attract resources and recruits. Oftentimes, mere frustration over political, economic, or religious conditions is not enough. Al Qaeda understands that, and, for that reason, it weaves a narrative of global jihad against a "modernization," "Westernization," and a "Judeo-Christian" threat. There is really just

one country that both spearheads and represents that threat: the United States. And so the most efficient way for a terrorist to gain a reputation is to attack the United States. The logic is the same for all monopolies. A few years ago, every computer hacker in the world wanted to bring down Microsoft, just as every aspiring terrorist wants to create a spectacle of destruction akin to the September 11 attacks inside the United States'' [1].

He further wrote,

''From terrorism to global warming, the evils of globalization are more dangerous than ever before. What went wrong? The world became dependent on a single superpower. Only by correcting this imbalance can the world become a safer place'' [1].

Is globalization really causing stress in the developing countries and provoking fundamentalist groups?

At the same time there is another argument going on that ICT revolution might be one of the main drivers for globalization but on the other hand it can also be used against this wave of globalization. Lt. Colonel (retired) Timothy L. Thomas states in his article in 2003,

"The Internet provides terrorists with anonymity, command and control resources, and a host of other measures to coordinate and integrate attack options'' [2].

In the same article he further mentioned,

''Terrorists have access, like many Americans, to imaging data on potential targets, as well as maps, diagrams, and other crucial data on important facilities or networks. Imaging data can also allow terrorists to view counterterrorist activities at a target site. One captured al Qaeda computer contained engineering and structural architecture features of a dam, enabling al Qaeda engineers and planners to simulate catastrophic failures'' [2].

Many researchers believe that in fact technology is meant for the well-being of the society and mankind but because of the easy access and less or in some places no governance, anti social elements could easily use it to achieve their evil purposes. The argument can be supported by the fact that modern terrorists have already started using these technologies. They are taking benefits from all technologies ranging from internet to satellite phones. All this clearly shows that terrorists are taking full advantage of these technologies which were meant for the betterment of the people.

Are the new communication technologies really changing the terrorism paradigm?

Another serious question that is being asked for some time now, is the linkage of Islam and terrorism. Most of the researchers link the growing terrorism to Islam because of the concept of Jihad in Islam. According to them, Islamic terrorists are becoming the main threat to Western countries. David Bukay also warned about the same threat in his article "What Is to be done?". He wrote,

''The greatest threat posed by fundamentalist Islam remains the non-conventional threat. As former CIA director James Woolsey pointed out, the United States does not have to wait for another Pearl Harbor to understand that there is no greater threat to its security than terrorism involving weapons of mass destruction'' [3].

So here another question arises that is the so called Islamic terrorism really becoming a threat to the west?

1.2 Objectives of the Study

The aim of the thesis is to access all the issues mentioned above. All the three questions will be answered on the basis of an empirical analysis. I will try to find out whether globalization is playing any role in the growing terrorism and at the same time I will analyze the ratio of terrorism in developed countries.

Another objective of the study is to find out the impact of technology on terrorism. First the role of ICT will be evaluated in the overall terrorist

activities and secondly I will explain the actual use of technology especially ICT in terrorist activities. I will try to present a conclusion based on the study of Islamic terrorist groups with a special focus on the terrorist activities in Khyber Pakhtoonkhwa (formerly known as North West Frontier Province) province of Pakistan.

In the last part, based on the empirical analysis, I will try to examine the threat that Islamic terrorist groups are posing to the West. I will try to find the evidence that Islamic terrorist groups are taking advantage of the ICT to carry out attacks against the west?

1.3 Research Questions

The focus of my research was on the following questions.

1. Is globalization attracting terrorists and are the developed countries under threat from terrorism?
2. Is there any role of the new technologies in the growing terrorism? How terrorists use ICT in their daily operations?
3. Are Islamic terrorists becoming a growing threat to the West?

1.4 Significance of the study

The significance of the study cannot be overlooked. Since the study is based on an empirical analysis, it will give us a clear and real picture of what is happening around us. It will also give us an overview that how much terrorism has influenced by ICT. If technology is being used for purposes other than the desired then we can also use the same technology for countering the very same problem. Since the study will focus on the possible ways in which technology can be misused, it will give us an idea how to use it for counter terrorism. In accordance to the situation in Pakistan, They have yet to establish a known organization for countering cyber terrorism; this study can provide a platform from where to start.

In a broad spectrum, the study will provide a better understanding on the relevance of globalization to terrorism and ICT to terrorism. At the same time, the empirical analysis will help us in analyzing the Islamic terrorist threat to the West.

1.5 Structure of the study

The study is divided into seven major chapters and addresses a number of diverse but interrelated issues. Chapters 2 and 3 deal with the literature review. In chapter 2, the concept of terrorism, types, causes of terrorism and the combination of technology and terrorism are discussed. To provide reader with a glimpse of reality, Islam and terrorism is also briefly discussed in this chapter. Chapter 3 focuses on cyber-terrorism only. I have tried to explain the concept of cyber-terrorism along with the three different levels of cyber-terrorism.

Chapter 4 identifies the research methodology. In this chapter, I have thoroughly explained the methods and data. All the variables that are used for the empirical analysis are discussed and explained in this chapter.

Chapter 5 has a special focus on Pakistan as a case study. In this chapter, I have tried to sum up how Pakistani terrorist groups use technology especially ICT for their activities. The focus in on the most popular terrorist group named, Tehrik-i-Taliban Pakistan (TTP).

Chapter 6 consists of the results of the empirical analysis. The study is concluded in Chapter 7.

Chapter 2 Literature review

In this chapter a detailed background of the research topic will be presented. I also review the literature on the subject of ICTs and terrorism.

2.1 Information and Communication Technologies, ICT

Information and communication technologies or ICT is a broad term which covers all technical means for the communication of information. In other words ICT refers to the use of the digital technologies which help people in processing and communicating information. These technologies range from personal computers to PDAs (personal digital assistant), from mobile phones to satellite phones and from fax machines to robots.

Demand for more advanced communication technologies led to tremendous progress in the late seventies and according to Dr Tusubira and Kyeyune of Makerere University, the telecommunication engineers at that time dreamed for one thing which they called ‘’the death of distance’’ [4]. This dream came true and eventually technologies like internet and satellite phones emerged. Nowadays the modern communication technologies have changed the life of a common man. Now people are living in a global village where information is at the finger tips of every person and all this happened because of the ICT revolution.

Information and communication technologies have changed our lives. People are using ICT for social communication, education and businesses. Collaborative virtual environments (CVE) have provided businessmen with the opportunity to run their businesses worldwide and in geographically different locations while keeping an office environment at the same time. Satellite phones have reduced the distance between loved ones and they can interact at any time and at any place.

In short, we can say that the dream of engineers at late seventies which they called ‘’the death of distance’’ has come true.

2.2 Globalization

Globalization is the process of interaction and integration among the people and companies of different geographical locations. It could also be described as a process which integrates regional societies, economies and cultures through a global network. Globalization is not a new phenomena and it has a history of thousands years but because of the technological development in the recent years it has received an enormous boost. Especially advances in Information technology in particular have dramatically transformed globalization.

In Globalization: Good or bad? David Horst define globalization as,

''Globalization is the trend toward a single world society, which includes communications, ease of travel, advertising, the Internet, popular culture and the increase of English as an International Language'' [5].

Globalization has become a very controversial term and quite large numbers of researchers believe that today's world is at risk and globalization is the main player.

2.3 Terrorism

This might be the most controversial term in the modern world. Because of the controversies over this term there is no universally accepted definition of terrorism. Different governments and different agencies are using their own definition of terrorism. According to a study by Jeffrey Record of US army in 2003,
''A 1988 study counted 109 definitions of terrorism that covered a total of 22 different definitional elements'' [6].

Terrorism became a controversial term because of the mixed interests of different nations and countries. This controversy heated up especially after the 9/11 attacks.
United Nation has also mentioned the same problem. According to The United Nations, the international rule of law and terrorism,

‘’The United Nations Organization has been unable to reach a decision on the definition of terrorism exactly because of the conflicting interests of sovereign states that determine in each and every instance how a particular armed movement (i.e. a non-state actor) is labeled in regard to the terrorist-freedom fighter dichotomy’’ [7].

We have experienced this issue too many times where the patriot or freedom fighter of one country is a terrorist to the other. This controversy could grow bigger and bigger until and unless we stop thinking about our own interests.

Todd Sandler and Walter Enders, very well known and famous names on this topic defined terrorism as

‘’*Terrorism is the premeditated use or threat to use violence by individuals or sub national groups in order to obtain a political or social objective through the intimidation of a large audience beyond that of the immediate victims*’’ [8].

They further mentioned

‘’two essential ingredients characterize any modern definition of terrorism: the presence or threat of violence and a political/social motive. Without violence or its threat, terrorists cannot make a political decision maker respond to their demands. Moreover, in the absence of a political/social motive, a violent act is a crime rather than an act of terrorism’’ [8].

The definition provided by Sandler and Enders is consistent with many other definitions commonly used. I will also use the above definition throughout my research work.
Another simplified definition of terrorism is the one adopted by the National consortium for study of terrorism and responses to terrorism (START) of the US Department of State.

"The threatened or actual use of illegal force and violence by a non state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation" [9].

For my research, I have used the terrorism data collected and maintained by START as a database of all the global terrorist activities called global terrorism database (GTD). The definition adopted by global terrorism database focused on non state terrorism only.

2.3.1 Types of Terrorism

In the light of the definition provided by Todd Sandler and Walter Enders, terrorism could take many forms. In simple words, terrorists groups around the world are using their tactics in every possible way to achieve their evil goals. The most horrible part of this story is that these evil tactics has their affects on each and every field of life, ranging from social life to economy, politics and religion etc.
Some of the common types of terrorism are narco-terrorism; which is related to the field of narcotics and drugs, bio-terrorism; related to the abuse of biological weapons, state-sponsored terrorism; which is a highly controversial type because of the involvement of the state machinery and political motivations and there is typically no consensus on which country is involved in committing state-sponsored terrorism. Cyber-terrorism is another type in which information technology and computers are used for terrorist activities. Cyber-terrorism is highly related to my research topic and I will discuss it in detail in next chapters.
In their book, political economy of terrorism, Todd Sandler and Walter Enders mentioned an essential distinction between two forms of terrorism. One is called transitional terrorism while the other is domestic terrorism. According to them,

‘’Another essential distinction is between domestic and transnational terrorism. Domestic terrorism is homegrown and has consequences for just the host country, its institutions, citizens, property, and policies. In a domestic incident, the perpetrators, victims, and audience are all from the

host country. Terrorism is transnational when an incident in one country involves perpetrators, victims, institutions, governments, or citizens of another country. If an incident begins in one country but terminates in another, then it is a transnational terrorist event, as is the case for a hijacking of a plane in country A that is made to fly to country B'' [8].

2.4 ICT and Terrorism

Information and communication technologies have their impacts on each and every field of life. It has made our lives easy by solving the communication complexities. In the last two decades technology has evolved tremendously and some extra-ordinary technologies have been introduced. In the early 90's having a second generation mobile phone was considered to be a luxury but today people are using PDAs equipped with almost every communication facility. This change, which some authors called "evolution of technology'' happened because of the economic race between countries and organizations. New technologies are always supposed to be for the betterment of the society and people but because of less or no restriction and easy availability there is no guarantee that these technologies are always used for the intended purpose.

Imagine Google Earth which is one of the many modern technologies. Google Earth service has helped us in many ways. Today researchers are using this service in many different fields. For instance, researchers in the field of geographical information systems use these maps for measuring the vulnerability of an area to floods and earthquakes and many other natural disasters. But did anyone ever imagine that this technology could also be used for killing hundreds of innocent people? The very same technology was used by the terrorist involved in Mumbai, India attacks in 2008. According to a report published by Washington post,

''Gunmen Used Technology as a Tactical Tool, Mumbai Attackers had GPS units and Satellite Maps''

They further wrote,

‘’The heavily armed attackers who set out for Mumbai by sea last week navigated with Global Positioning System equipment, according to Indian investigators and police. They carried high-resolution satellite images like those used for Google Earth maps’’ [10].

The terrorist involved in Mumbai attacks were supposed to have trained using the same Google Earth maps.

The most threatening combination of technology and terrorism is known as cyber-terrorism. I am going to explain cyber-terrorism in detail in the forthcoming chapter.

2.5 Islamic terrorism

Since the tragic attacks of 9/11, Islam has become the most discussed and scrutinized religion. The only prominent aspect of Islam is its concept of “Jihad’’ and majority of the scholars are relating “Jihad’’ to the modern terrorism.

Islam is the religion of almost 1.6 billion people, regarded as the second largest religion in the world. Literally Islam can be translated as Peace, Thomas Lippman described Islam as

“Islam is an Arabic word that means submission, submission to the will of God. Muslim, its principal form means one who submits. The root is the same as that of the word for peace, salaam” [11].

According to Dr. B. Philips,

‘’The Arabic word "Islam" means the submission or surrender of one's will to the only true god worthy of worship "Allah" and anyone who does so is termed a "Muslim", The word also implies "peace" which is the natural consequence of total submission to the will of Allah’’ [12].

All the Islamic scholars agreed on one point that Islam is a religion of peace and its followers should maintain and promote peace throughout the world.

Islam can easily be linked with terrorism because more than half of the groups involved in terrorism worldwide are fighting in the name of Islam. They believe and propagate that Islam allows them to fight against those who are evil and they believe that their judgment is the ultimate. In accordance to the situation in Pakistan, the active terrorist groups believe that anyone who is not with them is against them and killing those innocent people is allowed in Islam because they are not helping these groups.

''No one is innocent in Pakistan, not a single person. Today we don't believe in anyone's innocence if he/she is not fighting in the name of Islam. We have no regrets if we kill 100 people (innocent) while trying to eliminate our target in Pakistan.'' (Interview with an arrested suicide bomber by Saleem Safi, Geo TV Pakistan 2009) [13].

If Islamic terrorists think this way about a Muslim majority country where Islam is the official religion, what would they feel about the west? What would be there feeling for the United States?

So question arises, as discussed by many of the researchers, is Islamic terrorism a growing threat to the West?

2.6 Causes of Terrorism

In order to overcome a problem, we must first know why it occurs? The same way, if we want to tackle the growing terrorism, we have to dig out its root causes. Only then we can effectively fight this monster.

If we study the lives of those who are involved in terrorism, we will find out that almost every terrorist thinks that he is justified in doing so. They will never consider themselves to be insane neither they want the world to consider them unhinged. In order to justify themselves they always need a particular cause. Now there might be an array of causes which encourage these people to engage in terrorism. According to researchers the main causes are poverty, unemployment, illiteracy, frustration, criminal behavior and religion. Tore Bjørgo has mentioned a classification of the causes of terrorism. According to him,

''Let us look at the various levels of causes of terrorism, some of which are more remotely and some more closely and directly linked with terrorism. The simplest way to organize them is to make a distinction between preconditions of terrorisms and precipitants of terrorism. Preconditions set the stage for terrorism in the long run, whereas precipitants are the specific events or phenomenon that immediately precede or trigger the outbreak of terrorism'' [14].

He further mentioned the classification of these causes as,

Structural causes: The causes that exists on the macro level, causes that people may or may not realize as affecting their lives. Rapid modernization, globalization, transitional societies and increasing individualism are types of structural causes. In simple words, if people are not able to follow the rapid changes in this globalized and modern world, they might feel themselves as aliens or not a part of this society. This could easily cause frustration and anger.

Facilitator (or accelerator) causes: By facilitator causes, Bjørgo means those causes which make terrorism attractive, without being prime movers. The new technology, NEWS media, the modern weapons and the concept of cyber-terrorism is playing a major role in attracting more and more recruits.

Motivational causes: Motivational causes are basically the actual grievances people experience at a personal level. These are the causes which motivate people for terrorism. There might be a variety of causes which we could term as motivational causes, such as poverty and social status etc.

Triggering causes: Bjørgo describes triggering causes as precipitators of terrorist acts, being momentous or provocative acts such as political calamity, an outrageous act committed by the enemy, or some other events that call for revenge or action. He further mentioned that even peace talks can trigger opponents of political compromise to commit terrorist actions to undermine and disturb negotiations.

Although up to some extent we have found out the root causes of terrorism but we still need to carry on our research in this evolving field.

There are many areas where researchers still disagree and the only way to fight this growing terrorism is to reach its roots. Without knowing the root causes we will never be able to overcome it.

2.7 Organizations doing research on growing terrorism

Today there are different organizations which are doing research on the growing terrorism and the impact of technology on it. They are doing their best to find out how terrorism can be reduced by protecting technology from being abused. One of the well known organizations is International Institute for Counter Terrorism (ICT) [8]. It is one of the leading academic institutes for counter terrorism founded in 1996. ICT is conducting research in almost every field, ranging from countering suicide bombings to monitoring the terrorist group's websites and their activities on the internet.

The US Department of State has also established a branch for counter terrorism called, Office of the Coordinator for Counter Terrorism. One of the most renowned organizations is called START (Study of Terrorism and Responses to Terrorism). START is a national consortium of the US Department of State based at the University of Maryland [15]. The basic responsibility of START is to maintain a database of all the terrorist activities worldwide and to carry out research about the formation of terrorist groups, how they recruit people and how they carry out their terrorist activities. Another well known organization is South Asia Terrorism Portal (SATP) [16]. This organization is also doing research on the growing terrorism with a special focus on South Asia.

Chapter 3 Cyber-terrorism

In this chapter, I will provide an insight to one of the most important and crucial aspect of the combination of technology and terrorism which is called Cyberterrorism. I will explain the concept of cyber-terrorism, its consequences and possible prevention.

3.1 What is Cyber-terrorism?

The marriage of technology and terrorism

This is the type of terrorism which is directly associated with the advancement in technology. In fact the term "cyber-terrorism'' was introduced after the unmanageable and uncontrollable development in the field of technology.

Just like terrorism, cyber-terrorism is also a controversial term and a universally agreed definition is yet to be adopted. Some researchers say that using computers and information technology resources for any terrorist activities could be termed as cyber-terrorism. Others say that cyber-terrorism is the abuse of information systems and data bases, like hacking an organization's database and getting information for the illegal purposes. Dorothy E. Denning of Georgetown University define Cyberterrorism as

''Cyberterrorism is the convergence of terrorism and cyberspace. It is generally understood to mean unlawful attacks and threats of attack against computers, networks, and the information stored therein when done to intimidate or coerce a government or its people in furtherance of political or social objectives. Further, to qualify as Cyberterrorism, an attack should result in violence against persons or property, or at least cause enough harm to generate fear. Attacks that lead to death or bodily injury, explosions, plane crashes, water contamination, or severe economic loss would be examples. Serious attacks against critical infrastructures could be acts of Cyberterrorism, depending on their

impact. Attacks that disrupt nonessential services or that are mainly a costly nuisance would not'' [17].

According to the definition provided by Denning, any terrorist activity against computers and networks which results in violence against people or property would be cyber-terrorism. In simple words, this definition points to the use of computers on a high level in a terrorist activity.

There is also another term associated with cyber-terrorism, which is referred to as pure cyber-terrorism. Pure cyber-terrorism is sometimes called as ''bloodless terrorism''. Pure cyber-terrorism refers to the terrorist activities that happen entirely in the virtual world. In other words the any attack against computers or information services is considered as cyber-terrorism. But according to Sarah Gordon a senior research fellow in Symantec security response, cyber-terrorism can't be associated with attacks against computers only. She mentioned,

''Most people, governments included, consider Cyberterrorism primarily as the premeditated, politically motivated attack against information, computer systems, computer programs, and data by sub national groups or clandestine agents. However, as we have seen, the real impact of the computer on the terrorism matrix is considerably wider. By limiting our understanding of Cyberterrorism to the traditional 'computer as target' viewpoint, we leave our nation open to attacks that rely on the computer for other aspects of the operation'' [18].

It is a fact that terrorist organizations need funds to carry out their activities and because of our online banking systems and financial services they always have a chance to break into our banks without any confrontation and steal money which can later be used to fund their activities.
The same idea was mentioned in a report ''Computers at Risk'' written in 1991, by the Computer Science and Telecommunications board of the National research council. They wrote,

"We are at risk. Increasingly, America depends on computers. They control power delivery, communications, aviation, and financial services.

They are used to store vital information, from medical records to business plans to criminal records. Although we trust them, they are vulnerable - to the effects of poor design and insufficient quality control, to accident, and perhaps most alarmingly, to deliberate attack. The modern thief can steal more with a computer than with a gun. Tomorrow's terrorist may be able to do more damage with a keyboard than with a bomb'' [19].

This article was written in 1991, when they tried to explain that because of the vulnerability of computers and technology, we are at risk. Today after 19 years, we are still at risk.

3.1.1 Levels of Cyber Terror

Cyber-terrorism may take different forms. It could lead to physical attacks and destruction for example hacking into the controls of a US Predator drone and making it fire missiles, while it could also be in the form of breaking into a bank or any other financing system and stealing millions of dollars. The "Cyber terror - Prospects and Implications" a white paper published by the Center for the Study of Terrorism and Irregular Warfare Monterey, CA mentioned three different levels of Cyber terror [20]. According to this white paper, cyber terrors may come in many forms and based on the capabilities of these different forms, it could be divided into three layers.

Simple–unstructured: The simple-unstructured is the capability of basic hacking against individual systems using tools created by someone else.

Advanced–Unstructured: A more sophisticated level of cyber terror. The level which has the capability to conduct hacking attacks against multiple systems and/or networks. It could also involve the modification of the already created hacking tools according to specific requirements.

Complex-Coordinated: The most sophisticated level of cyber attacks. Complex-coordinated level is capable of coordinated attacks causing mass-disruption against integrated, heterogeneous defenses (including cryptography). This level has the capability of creating sophisticated hacking tools.

3.2 Potential attacks

For the past few years some major potential cyber terrorist attacks have been noticed and it has already rung the alarm. From these few major incidents we can have an idea that where the modern terrorism is heading.

In December 2009, BBC reported that a US Drone has been hacked by Iraqi insurgents, they reported,

''Iraq insurgents 'hack into video feeds from US drones' '' [21].

They further wrote,

''Insurgents in Iraq have hacked into live video feeds from unmanned American drone aircraft, US media reports say. A senior Pentagon official is quoted by the Wall Street Journal as saying that although militants were able to view the video, there was no evidence that they were able to jam electronic signals from the aircraft or take control of them. The unnamed official said the US Defense Department had addressed the issue by working to encrypt all video feeds provided by drones in Iraq, Afghanistan and Pakistan'' [21].

US Predator drone is an unmanned aerial vehicle (UVA) used by the United States air force. It is remotely controlled by pilots from thousands of miles away. It is used for the observation and monitoring and it also has two missiles which can be fired at the designated targets. In other words, Predator drone is a flying computer or a flying ''super'' communications device and the horrifying aspect is that it is equipped with two missiles, which can be fired by using the same communication channel.

Predator drone has become a major part of the war against terror in Iraq, Afghanistan and Pakistan and it has been used on regular basis in these areas.

The same incident has also been reported by Center for Strategic and International Studies (CSIS) in their report, transnational threats update. CSIS wrote,

''The Pentagon has been forced to acknowledge a major security breach after the Wall Street Journal reported that militants battling U.S. forces in Iraq and Afghanistan have been intercepting videos transmitted between American drone and U.S. ground forces in the two theaters. Although the exact details have yet to emerge, defense officials told the Journal that captured Iraqis had been found to have "days and days and hours and hours of [footage]" from U.S. aircraft on their laptops '' [22].

In 2006, the networks of US State Department were hacked and some unknown hackers downloaded classified data. The Center for Strategic and International Studies (CSIS) regarded this incident as a serious threat to the national security. According to CSIS,

''If Chinese or Russian spies backed a truck up to the State Department, smashed the glass doors, tied up the guards and spend the night carting off file cabinets it would be an act of war, but when it happens in cyberspace we barely notice'' [23].

In November 2009, hackers stole more than 9 million dollars by hacking into the Royal bank of Scotland networks. The robbery was carried out in 49 different countries [23].

The above mentioned attacks are few of the numerous attacks carried out almost every day. Every country and their cyber security agencies are trying their best to tackle these problems but the advancement in technology has given some extra space to the terrorists and they are succeeding in one way or another.

3.3 How can we tackle Cyber-terrorism?

There is no absolute way to stop people from misusing technology but there are always ways by which we can restrict its abuse and make it difficult for anti social elements. In fact defending against the cyber-terrorism is far more difficult than defending against the conventional terrorism.

In order to prevent or minimize cyber-terrorism there is a need to do in depth research in some of the basic features of the new technology. These

features are pointed out by Kevin Curran, Kevin Concannon and Sean McKeever of University of Ulster, UK as,

''The reason this risk exists is due to the fact that the Internet offers little or no regulation, potentially huge audiences, anonymity of communication, and a fast flow of information. These four critical features require further research in order to combat Cyberterrorism'' [24].

Chapter 4 Research Methodology

This study has a broad focus on three different issues. First I have to study the role of technology driven globalization in the growth of terrorism and to assess the terrorist threats to more globalized countries. Secondly I have to find out how terrorist groups use technology and especially ICT for their activities. To find the answer, I have focused on the terrorist groups involved in the Khyber Pakhtoonkhwa Province of Pakistan. Finally I will try to assess the link between Islam and terrorism by studying the very same Islamic militant groups and I will also try to evaluate the

I have already discussed the existing literature in chapter 2 and 3. In this chapter I will present the methods and procedures for data collection during the research.

4.1 Broad Research Methodology

According to Abbas Tashakkori and Charles Teddlie, there are three different categories for carrying out research in social and behavioral sciences [25]. According to them, researchers in these fields can be categorized into three groups, those working with qualitative analysis, quantitative analysis and mixed methodologists who are interested in both types of data and working with them.

I decided to follow the mixed methodology as I wanted to make use of both qualitative and quantitative data. The concept of mixed methodology is also explained by Alan Bryman (2006) as

''There can be little doubt that research that involves the integration of quantitative and qualitative research has become increasingly common in recent years. In this sense, we end up with three distinct approaches to research: quantitative; qualitative; and what is variously called multi-methods, multi-strategy and mixed methods or mixed methodology research'' [26].

While the importance of mixed methodology has been explained by David L. Driscoll, Afua Appiah-Yeboah, Philip Salib, and Douglas J. Rupert (2007) as

''Mixed methods designs can provide pragmatic advantages when exploring complex research questions. The qualitative data provide a deep understanding of survey responses, and statistical analysis can provide detailed assessment of patterns of responses'' [27].

Major part of the thesis is based on the qualitative data As Trisha Greenhalgh, a senior lecturer at University College London mentioned

''Researchers who use qualitative methods seek a deeper truth. They aim to study things in their natural setting, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them and they use a holistic perspective which preserves the complexities of human behavior'' [28].

While choosing the research methods, my intention was to keep myself focused on getting detailed information about the impact of technologies especially ICT on terrorism and to find out the reality of the link between Islam and terrorism. The focus was of course on the Pakistani terrorist groups.

The different methods used during my research are briefly explained in the forthcoming section.

4.2 Method: Negative binominal regression

I have used negative binominal regression to estimate the relative effect of a set of independent variables on the dependent variables. The negative binominal regression is a variant of the poisson regression, which is a form of regression analysis used to model count data and contingency tables. The difference between the two regression models concerns the variation in the distribution of the count variable. In other words the negative binominal distribution has a greater variation than that of poisson and. Thus binominal regression is the appropriate method to use in this

study, considering how the dependent variable is a count variable with the large variation in the distribution.

4.3 Data Collection

For a good research it is always essential to gather information from both primary and secondary sources. Primary data is the one that the researcher has collected himself while secondary data is the research work of others. Basically secondary data is the primary data of other researchers. The data gathered from primary sources always needed to be verified in the light of the secondary data.

4.3.1 Primary Sources

The primary sources for my thesis mainly consist of Quran and Hadith. Although there are different books written on the concept of Jihad in Islam but in order to remove any ambiguities, I decided not to consult any of those books and take help from the real book itself. I also conducted four unstructured interviews on the phone in which I tried to collect data about the actual use of technology by Pakistani terrorist groups. All the four interviewees are among those who had soft feelings for Tehrik-i-Taliban Pakistan in the past. They decided to move the other way when these terrorist groups started showing their real agenda. They provided me with some practical information about the operations of Taliban and their internal environment. These interviews helped me a lot to improve the value of information and enabled me to have a deeper insight of the topic. Unstructured interview is a flexible way to collect information but it also poses some challenges. Common challenges include the degree of trust between the interviewer and interviewee and it is also difficult for the researcher to exert the right amount and type of control over the direction and pace of the conversation. Further a significant amount of time is needed to gather right information [29].
I tackled these problems easily because the interviewees belong to my area and we knew each other for a long time. Hence there was no problem regarding trust or in controlling the pace and direction of the conversation.

4.3.2 Secondary Sources

Secondary data is the primary data of other researchers. Basically secondary data is the pre-existing data which was not specifically collected for the current research. According to M. Katherine McCaston (2005, P. 1),

''Secondary data analysis can be literally defined as "second-hand" analysis. It is the analysis of data or information that was either gathered by someone else (e.g., researchers, institutions, other NGOs, etc.) or for some other purpose than the one currently being considered, or often a combination of the two'' [30].

Every researcher wants to know what has already been done on the same topic and what research questions are already answered, that's why secondary data is always collected before primary data.

Secondary sources for collecting the data regarding the thesis consist of a wider variety of literature that is relevant to the research topic. These include books, articles and journals. Internet was also used extensively for collecting secondary data. All the quantitative information about the number of terrorist attacks and the genre of different terrorist groups active throughout the world was collected with the help of secondary sources.

4.3.3 Ethical Consideration

Informed consents, anonymity of the participants and prior permission were important to the study. The informed consent and anonymity of the participants was required and it was ensured during the research study. All the four interviewees were contacted prior to interviews and they were informed of the research. After their approval, interviews were held. The quantitative data about the number of terrorist attacks all around the world and the genre of the terrorist groups involved in these attacks was extracted from the already available online database, called global terrorism database (GTD) maintained by Study of terrorism and responses to terrorism (START) a consortium of US State Department. The data available in the online database was used after the permission of START.

4.4 Description of variables

The study is largely based on the empirical analysis of the terrorist activities from 1991 to 2006. I will try to answer the main questions by evaluating the same analysis.

4.4.1 Dependent variable: Worldwide terrorism

The intensity of terrorism around the world will be measured from the terrorist attacks from 1991 to 2006. The number of these terrorist attacks provides basis for the study.

The source for the terrorist attacks is the global terrorism database (GTD), maintained by the national consortium for the study of terrorism and responses to terrorism (START) based at the University of Maryland. Study of terrorism and responses to terrorism (START) is a center of excellence of the US Department of Homeland security. Global terrorism database (GTD) is an open source database including information on terrorist events around the world from 1970 through 2006. GTD is a complete database and unlike other event databases, it includes systematic data on domestic as well as transitional and international terrorist incidents. It contains information about more than 87,000 terrorist attacks and currently it is the most comprehensive unclassified database on terrorist event in the world.

Since I intended to evaluate the impact of technology driven globalization, I decided to use the data from 1991 instead of 1970.

4.4.2 Control variables

In this section, I will provide an overview of the variables that I used to evaluate the research questions.

GDP per capita: Since I am going to evaluate the impact of growing terrorism on globalized or developed countries, I need to know the level of development of different countries. The level of development is measured as the level of income per capita in a country. This variable when used in association with terrorist attacks will provide us an idea

about the terrorist incident in the richer and developed countries. Since pessimists of the technology driven globalization argue that globalization is creating a discomfort among the poor and developing countries, here we would be expecting more terrorist incidents in developed countries than others.

The source for GDP per capita is the World Development Indicators (World Bank 2008) [31].

Civil war and civil peace years: These variables will give us an insight about the terrorist incidents in a country during the times of both civil war and civil peace. In order to conclude that whether globalization and advancement in technology has anything to do with terrorism, we need to find out the real causes of terrorism. When I use the above variables in my empirical analysis I will be expecting increase in terrorist incidents during the times of civil war.

The civil war and civil peace year's variables are from the PRIO-Uppsala dataset [32].

Civil war and conflicts are explained in detail by Gleditsch in their article Armed Conflict 1946-2001: A New Dataset [9]. They define an armed conflict as,

''A contested incompatibility that concerns government or territory or both where the use of armed force between two parties results in at least 25 battle-related deaths. Of these two parties, at least one is the government of a state'' [33].

They further divided the armed conflicts into three categories, minor armed conflict, intermediate arm conflict and war. But the above definition is used to distinguish civil war and peace years.

Population size: Population size is measured as total population of a country and it is based on the data from the World Development Indicators (World Bank 2008) [31].

Many researchers have associated a large population to more violence and rebellions. In other words, the more population a country has, the more vulnerable that country would be. For instance a terrorist incident in China or India is more likely to have a larger impact as compared to a country with less population. Thus terrorist attacks are expected to be more in larger population countries.

Democracy and Autocracy: It is a common observation that human rights are always violated during dictatorships and in the absence of democracy. Violation of human rights is another aspect that could easily boost the terrorist incidents. These variables are based on the data obtained from the POLITY IV dataset maintained at the University of Maryland. The POLITY IV data set distributed the governing authorizes of states into either democratic or autocratic according to the following conditions,

''This perspective envisions a spectrum of governing authority that spans from fully institutionalized autocracies through mixed, or incoherent, authority regimes (termed "anocracies") to fully institutionalized democracies. The "Polity Score" captures this regime authority spectrum on a 21-point scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy). The Polity scores can also be converted to regime categories: we recommend a three-part categorization of "autocracies" (-10 to -6), "anocracies" (-5 to +5 and the three special values: -66, -77, and -88), and "democracies" (+6 to +10)'' [34].

Internet subscription per capita: Since I am evaluating the impact of ICT on terrorism, internet usage would give us an insight about the country's technological standing. Internet usage is measured on the basis of internet subscription per person of a country. Since technology alone and in association with globalization has attracting negative comments from most of the researchers, we would be expecting a high terrorist incident rate in countries with high internet usage. This variable will help us in presenting a conclusion about the impact of ICT on terrorism.

The variable is based on the data taken the World Development Indicators CD ROM (World Bank 2008).

Muslim Majority Countries: Data of countries with large Muslim population is taken the article ‘’The Quality of Government’’ written by La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny in 1998 [35].

As I have already discussed in the previous chapters, Islam is highly linked with terrorism. So this variable will show us the number of terrorist attacks in Muslim majority countries. Based on the past research, I am expecting to have to high terrorist incidents rate in these countries.

Islamic terrorist groups: Accessing the involvement of Islamic groups in terrorism is one of the main objectives of the study. The variable will help me with this issue. Although this is a controversial debate whether these groups are Islamic or not but putting this debate on a side, I will count each and every group or person as Islamic terrorist who claimed to be acting according to Islam. When we combine this variable with the internet subscription variable, it will give us an idea about the effect that internet or ICT has on Islamic terrorism.

The number of Islamic terrorist groups is concluded from the Global terrorism database.

Western countries: To evaluate the effect of terrorism on globalized countries, I have opted to access the terrorist incidents in Europe, North America and Japan. These are treated as developed and globalized countries and I have called it Western countries. This variable will help us in many ways. It enables us to evaluate the impact of terrorism in these globalized countries and when we combined it with the variable representing Islamic terrorist groups, it will give us a picture of the Islamic terrorism in Western countries and the threat that Islamic terrorist posses to the West.

4.5 Limitations

Every piece of research has certain limitations. This thesis also has some limitations caused mainly by the lack of resources, time management and access to information.

For accessing the actual use of technology in terrorist activities, the study addresses only the terrorist groups involved in Pakistan. Due to lack of resources I couldn't cover the activities of other terrorist groups, for instance those who are operating in Afghanistan and Iraq. Even in the case of Pakistani terrorist groups, I couldn't get the updated information mainly because of two basic reasons, first because of the Pakistan army's continuous military operation in the area of focus and secondly because of the lack of resources to travel to Pakistan. So the conclusion for the actual use of technology in terrorist activities is mostly based on unstructured telephonic interviews, secondary data and the observation before the military operation of Pakistan army in the area of interest.

The quantitative data which is used for the conclusion is taken from the Global terrorism database (GTD). The data is conclusive and beyond question but still they were not able to provide a decisive data for Afghanistan and Iraq. These two countries are suffering from war and thus there is no clear clue that who is behind most of the terrorist attacks. In result most of the perpetrators of terrorist attacks in these two countries remained unknown.

Apart from the actual use of technology in terrorist attacks there are very less clues which shows incidents related to cyber-terrorism and there is no credible database which records the cyber terrorist attacks.

4.6 Data analysis

Data analysis takes place once the ground work for the research is done. All the interviews and observations are completed and ready to be analyzed. In this study, the data collected through primary and secondary sources were analyzed in the light of the research questions;

I have drawn conclusions and recommendation, based on the empirical analysis of the available data. Possibly the most challenging part of the research was to integrate the results of the analysis into a set of conclusions. The important aspect in the mixed-methodology is the combination of both qualitative and quantitative methods and it enabled me to collect information from many different sources, thus enhancing the reliability of the conclusions.

Chapter 5 Terrorism in Pakistan – A Case study

As I have already mentioned in the previous chapters, this thesis has a special focus on Pakistan. In this chapter, I will briefly explain Pakistani politics, its geo strategic importance, and different Islamic militant groups and their profiles. I will also try to find out the reasons behind the presence of the large number of these terrorist groups in Pakistan.

5.1 Country Profile

The Islamic Republic of Pakistan emerged as an independent sovereign state on 14th August 1947, as a result of the division of former British India. Geographically Pakistan is located in South Asia, bordering the Arabian Sea, India on the east and Iran and Afghanistan on the west and China in the north. Pakistan covers 796,096 km^2 with a population of 163 million approximately. According to The World fact book Pakistan stands at 6^{th} number among the most populous countries of the world, and area wise it is on 36^{th} number in the world (The World Fact Book, 2009). 96% of the population consists of Muslims. The administrative units of Pakistan are four provinces Sindh, Punjab, Khyber Pakhtoonkhwa and Balochistan, four territories; Islamabad Capital Territory, Federal Administered Tribal Areas (FATA), Azad Jammu and Kashmir and Gilgit-Baltistan. Population-wise Punjab is the biggest province and area-wise Balochistan is the largest province. Urdu and English are Pakistan's national and official languages respectively. All four provinces also have their provincial languages.

Pakistan is the only Islamic nuclear power and a member of the United Nations, Commonwealth of Nations, Next Eleven economies and the G20 developing nations. In 2004 because of the close alliance with United States against the war in terror, Pakistan was designated as a major Non-NATO ally. Since then Pakistan is fighting against Taliban and Al Qaida as a front line state.

Islamic Republic of Pakistan

Provinces:

1. Balochistan
2. Khyber Pakhtoonkhwa
3. Punjab
4. Sindh

Territories:

5. Islamabad Capital Territory
6. Federal Administered Tribal Areas
7. Azad Jammu and Kashmir
8. Gilgit-Baltistan

Table 5.1: Pakistan's General Statistics (1998 & 2008)

General Statistics	1998	2008
Area (Km^2)	796,096	
Population (million)	132.35	160.97
Male	68.87	83.54
Female	63.47	77.43
Population Density (Persons per Sq. Km)	166.3	202.1
Male	22.1	19.1
Female	20.3	18.3
Literacy Ratio (10+) %	44	56
Male	55	69
Female	32	44

Source: Compendium on Gender Statistics of Pakistan (2009)

5.2 Politics and governance

Pakistan is a federal parliamentary democratic system with President as head of the state and Prime Minister as head of the government and Islam is the state religion. The legislature or parliament consist of two parts, a lower house called National assembly and the upper house called Senate. Both of these houses are responsible for making laws for the country. Members of the National assembly are elected for five years through direct election while Senate members are elected by provincial assemblies with equal representation from each province as well representatives from the federally administrated tribal areas (FATA) and the capital territory Islamabad. All the four provinces and Gilgit-Baltistan have their own provincial legislative assemblies.

Politics in Pakistan has never been steady and the country has seen four Martial laws since 1958. Army has ruled the country for more than half of the time since independence. Every time when military took over they suspended the country's constitution and then made amendments according to their own choice. There has never been a consistent policy for the country and every time the government changes, they change the policy. Especially the military regime never followed one policy. Unfortunately even now when there is a civil government in place, they are always under pressure from the military influence and sometimes they can't even exercise their legislative rights.

Apart from Army, religion has always played in important role in the country's politics. There are abundant of religious political parties in Pakistan and they have strong influence on the political system. The religious political elements were always present in Pakistan but they became increasingly prominent during the military regime of General Zia ul Haq. General Zia ul Haq used religion as a ladder for his personal interests. It was the same era when Pakistan got involved in the Afghan war against the then USSR.

5.3 Religious extremism

Pakistan has a long history of religious extremism. Since its independence, Pakistan has a burning dispute with India on Kashmir. The issue has leads both countries into four wars and is still unresolved. Kashmir issue provided a perfect platform for the religious and extremist groups in Pakistan to recruit people especially youngsters. Even major religious political parties like Jamat-i-Islami (JI), *Jamiat Ulema*-i-*Islam (JUI) and others openly backed the religious extremist groups. They used to raise money for them and even invited them to their political gatherings.* This trend changed at once after the tragic attacks of 9/11 after which United States decided to put all the religious extremist groups on her watch list.

Beside the Kashmir issue which was of course a catalyst for the religious extremism in Pakistani society, Afghan war also played an important role. In fact Afghan war can be named as the prime source of current militancy in Pakistan. In December 1979 when Soviet Union started the deployment of their forces in Afghanistan, "Jihad" was adopted as a state policy against Soviet Union. With strong support from the United States, United Kingdom, Saudi Arabia and other Muslim countries, Mujahedeen (The freedom fighters) flourished. The Jihadi groups established themselves as a strong entity in Pakistani society. Recruiting people and raising funds for their activities openly and with the help of General Zia ul Haq regime. It was the time when Mujahedeen used to hold their meetings in Peshawar, the capital of Khyber Pakhtoonkhwa province. In other words, the Khyber Pakhtoonkhwa province (Formerly known as North West Frontier Province) was used as a base camp by those elements that were fighting the Soviet Union. In this thesis, I am going to present my research about the terrorist activities in the same area after United States attacked Afghanistan in 2001.

5.4 Area of Study

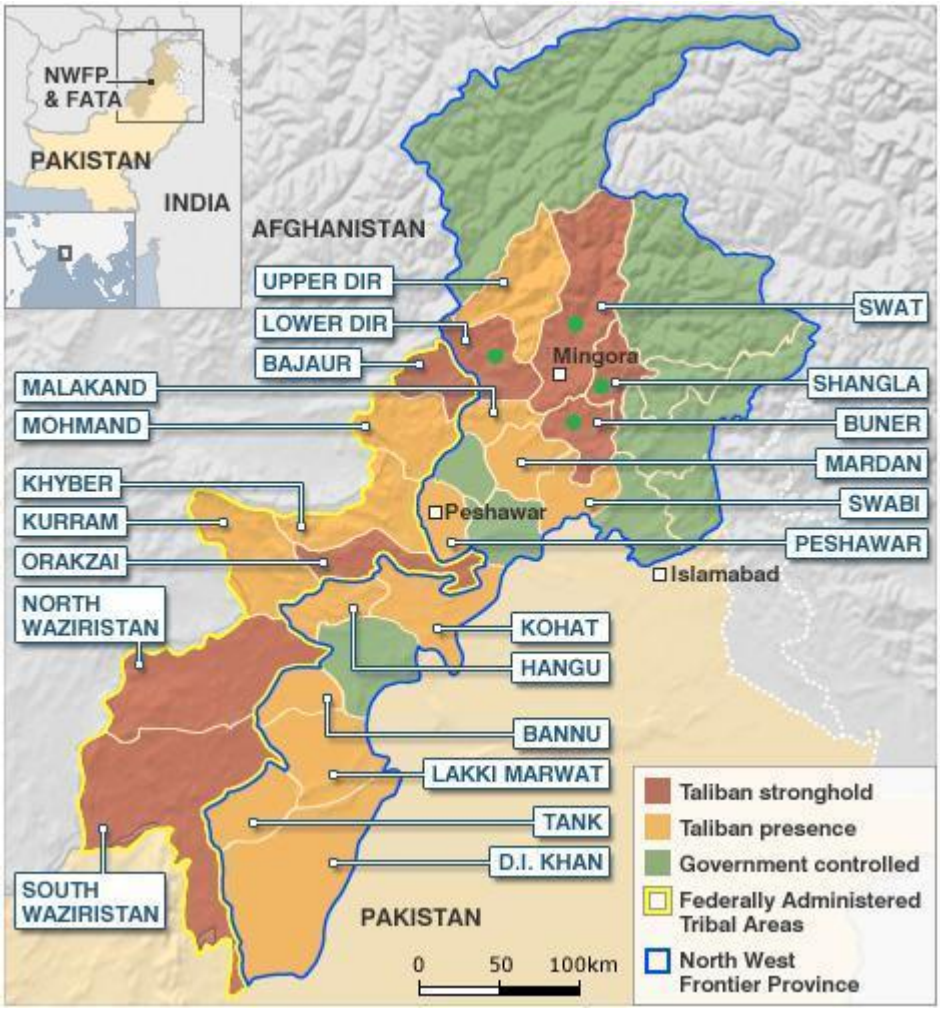
5.4.1 Khyber Pakhtoonkhwa and Federally Administrated Tribal Areas (FATA)

Khyber Pakhtoonkhwa is one of the four provinces of Pakistan while Federally Administrated Tribal Areas are seven administrative areas, directly controlled by the President through Governor of Khyber Pakhtoonkhwa. These seven agencies are Bajaur agency, Mohmand agency, Khyber agency, Orakzai agency, Kurram agency, North Waziristan agency and South Waziristan agency. These seven agencies share culture, language, traditions and borders with Khyber Pakhtoonkhwa. In past, Pakhtoon nationalist political parties have demanded the government on different occasion to merge FATA with Khyber Pakhtoonkhwa. The combined area of both Khyber Pakhtoonkhwa and FATA is approximately 101500 km^2 with a population of approximately 23 million.

FATA is the most underdeveloped region in Pakistan. There is not even a single University for more than 3 million people of the area and the literacy rate is only 17% as compared to 56% of the rest of the country [36]. Khyber Pakhtoonkhwa is relatively in a better position because of the provincial status and other developmental projects and with a literacy rate of 50%.

Constitutionally FATA and Khyber Pakhtoonkhwa might be two different regions but during the war on terror both of these areas has been treated the same. That's why in order to dig out the causes of terrorism and real faces of extremists in these areas, these two regions should be studied together. Throughout my thesis, I will mention both these regions as one.

Figure 5.1: Khyber Pakhtoonkhwa and FATA with areas where Taliban has/had strong hold



Source: BBC News [37]

The areas in red (Taliban stronghold) were considered as safe heavens for Taliban. The four red areas in the top corner, having green dots on it are those areas cleared by Pakistan army after one and half year of extensive army operation. One of those four areas (Lower Dir) is my home town.

While in the rest of the red areas named Bajaur, Orakzai, North Waziristan and South Waziristan are still under Taliban's control. Currently Pakistani army is carrying out a heavy military operation in Bajaur and North Waziristan with the help of Pakistan air force.

5.5 Pakistani Taliban

Extremism and militancy has taken deep roots in Pakistani society. Experts suggested a number of reasons for this burning issue including easy access to arms, non availability of justice both social and economic, bad governance, poverty, illiteracy, unemployment and the most important of all, the geo political situation of Pakistan. All these factors have played an important role in bringing extremism into Pakistani society.

The religious extremist groups in Pakistan could easily be divided into two broad groups, trans-national and domestic groups. Trans-national groups are those who are operating against India in the Indian occupied Kashmir. There are different groups in this category like Lashkar-e-Toiba (LeT), Hizbul Mujahedin (HM), Al Badr, Harkat-ul-Mujahedin and many more. Domestic extremist groups include Sipah-e-Sahaba, Tehrik Nifaz-e-Shariati-e-Muhammadi (TNSM), Sipah-e-Muhammad, Lashkar-e-Jhangvi and dozens of other organizations. These organizations have operated freely and openly in the past but since the tragic events of 9/11 all these groups are under fire both from United States and Pakistani government. Majority of these groups are declared as terrorists and their activities are banned in Pakistan.

Before 9/11 these groups never posed threat to Pakistan's internal stability but after 2001 when Pakistan became a front line ally of the United States in the war against terror, Pakistan started feeling the heat. Supporters of the Afghani Taliban transitioned into a mainstream Taliban force and they called themselves Tehrik-i-Taliban Pakistan shortly known as TTP. It was headed by Bait Ullah Mehsood who was killed in a US Drone Predator attack in 2009. This group has more resources, sophisticated weapons, technology and links with the kinds of Al Qaida. TTP gained support and

power by joining forces with other terrorist groups and they started a full pledged war against Pakistani army and NATO forces in Afghanistan.

5.6 Pakistani Taliban and Technology

As discussed in the previous chapters, with the advancement in technology we are somehow becoming more vulnerable to the anti social elements. Equipped with the modern technologies, Pakistani Taliban has become a nightmare for Pakistani society. They have used this technology in every possible way to implement their evil agenda. The most common technology that Pakistani Taliban has used extensively is FM radio broadcasting. In the beginning of insurgency they used FM radio broadcasting for almost everything. According to BBC News,

''It is believed that there are about 150 illegal FM radio stations in the North West Frontier Province (N.W.F-P) and the adjacent tribal areas. The pirate stations are mainly based in madrassas or religious seminaries, mosques and the compounds of militant leaders, but they often move to different locations to avoid detection.

Popularly known as "FM mullahs'' they condemn everyone and everything that goes against their interpretation of religion'' [38].

Some of the most common ways in which Tehrik-i-Taliban Pakistan used ICT are recruitment, communication, propaganda and publicity, planning and fund raising. In this section, I will thoroughly explain the use of technology by Pakistani Taliban.

5.6.1 Recruitment

Alongside internet, FM radio is the most commonly used technology by Pakistani Taliban. Before the military operation in Swat region, Taliban had daily radio broadcasting. The use of FM radio has been mentioned by Pakistan press foundation as,

''At 8 pm every night, Maulana Shah Dauran begins his daily broadcasts by reciting the holy Quran with translation and interpretation in Pashto. For the next two to two-and-a-half hours, he speaks on a variety of topics,

making announcements about Swat Taliban Shura decisions, providing information about the day's events and militants' attacks, and issuing threats to all those violating Taliban decrees'' [39].

One of the many applications of the FM radio was bringing in new recruits. Taliban used to brain wash youth by regularly talking about Jihad, martyrdom and the global rule of Islam. Beside FM radio, they used internet as the primary source for recruitments. Many websites were launched and YouTube was used extensively for this purpose. Even today when the resistance of Taliban is broken in Swat, Dir, Shangla and Buner districts, YouTube is used for the same purpose. Hundreds of videos are still available on YouTube showing young suicide bombers and inviting others to join Taliban in their holy war. In 2009, The Wall street journal reported the same issue as,

''As part of the classified effort, American military and intelligence personnel are working to jam the unlicensed radio stations in Pakistan's lawless regions on the Afghanistan border that Taliban fighters use to broadcast threats and decrees.

U.S. personnel are also trying to block the Pakistani chat rooms and Web sites that are part of the country's burgeoning extremist underground. The Web sites frequently contain videos of attacks and inflammatory religious material that attempts to justify acts of violence'' [40].

5.6.2 Communication

Long before the military operation, Pakistani Taliban had realized the importance of the modern communication tools. Many of them were killed by tracing their telephonic conversations and that was the time when they switched to more sophisticated technology. Today they are keeping themselves safe by using the very same modern communication technologies. The wall street journal quoted Mr. Holbrooke, the US special representative for Afghanistan and Pakistan as,

''Nothing has been done so far about impeding the Taliban communications, Mr. Holbrooke said. We have identified the information issue ... as a major, major gap to be filled'' [40].

Skype is one of the most commonly used communication tool that Pakistani Taliban are using to avoid detection. Skype is becoming a popular tool among the Pakistani and Afghani Taliban but in Pakistan they use it more efficiently because of the easy access to mobile broadband services. In 2008, the daily mail UK reported the issue as,

''Skype, a popular piece of consumer software that allows free calls to be made over the web, has been adopted by insurgents to communicate with cells strung out across the country. Unlike traditional mobile calls, which can be monitored by RAF Nimrod spy planes, Skype calls – the commercial application of a technology called Voice over Internet Protocol (VOIP) – are heavily encrypted. Voice calls are broken into millions of pieces of data before being sent down the line and reassembled by the other caller's computer'' [41].

5.6.3 Propaganda and Publicity

Pakistani Taliban has successfully used the new communication technologies for propaganda and publicity. Again the same tools, Internet and FM radio are the main sources. Hundreds of websites are launched everyday full of different videos and audios. These videos showing the killings of Pakistani armed personnel, foreign citizens and any of the local people who stood against Taliban. Easy access and less or no restrictions in the cyber world allowed Taliban to launch a new website once the government block the existing ones. Pakistani Taliban love YouTube. Every day they are uploading hundreds of videos showing their anger on the government policies and involvement in the war on terror. Apart from criticizing Pakistani government, Taliban also release videos showing their own way of justice and interpretation of Islam. These videos include flogging of convicts and punishing those who tried to speak against Taliban.

FM radio was another common tool used by Taliban for propaganda. As mentioned earlier, Taliban used daily broadcasting to spread their propaganda. During the daily radio transmissions, Taliban used to issue warnings to the government personnel and to those who acted against them. FM radio was the basic source for Taliban to inform people of the

area about their next line of action. In April 2008, the wall street journal reported,

''In Pakistan, Taliban leaders use unlicensed FM stations to recite the names of local Pakistani government officials, police officers and other figures who have been marked for death by the group. Hundreds of people named in the broadcasts have later been killed, according to the U.S. and Pakistani officials'' [40].

5.6.4 Planning

The extensive use of modern technologies for terrorist activities planning has given birth to a new but relatively unknown term called cyber planning. The use of these new technologies for terrorist purposes can be seen in many attacks around the world. The most recent one, the horrible Mumbai terror attacks in 2008 is a clear indication of the how can technology be turned against the innocent people. The terrorists behind the Mumbai terror attacks were trained using Google Earth images and thus creating a virtual city for them. According to the Sunday Times UK,

''An Indian Court has been called to ban Google Earth amid suggestions the online satellite imaging was used to help plan the terror attacks that killed more than 170 people in Mumbai last month.'' It further reported,

''There are indications that the gunmen who stormed Mumbai on November 26, and the people trained them, were technically literate. The group appears to have used complex GPS systems to navigate their way to Mumbai by sea. They communicated by satellite phone, used mobile phones with several different SIM cards, and may have monitored events as the siege unfolded via handheld Blackberry web browsers'' [42].

In Pakistan, after the strong military operation in the area, Taliban leaders are now dispersed and they don't have a strong hold on any area but they are still communicating and making plans for the continuing terrorist attacks in different Pakistani cities.

5.6.5 Fund Raising

Pakistani Taliban had used FM radio for fund raising during their strong hold in the area. They collected millions of donations apparently for building a huge mosque and madrassas in the area. Every night during their FM radio broadcasting they used to announce the names of the donors and the amount they paid to them for a worthy cause. Malakand Times, a local online Newspaper has reported this issue as,

''The illiterate women of the area, considering Maulana Fazlullah as a true leader of Islam, donated their gold made jewelry for the construction of Imam Dheri religious seminary along the bank of river swat'' [43].

The funds collected using this way was later used for buying weapons used against Pakistani army.

Chapter 6 Findings/Results

I will present the results and finding of the study in this chapter. The results which are based on the empirical analysis of the terrorist incidents from 1991 to 2006 will help us assess the general association between globalization of internet access on the incidence of terrorism. We will estimate the effect of Islamic terrorism on developed countries as well as the effect of ICT within majority Muslim countries in terms of the incidence of terror attacks.

6.1 Hypothesis

The variables that we discussed in the research methodology chapter will be used to answer some hypotheses. These hypotheses are derived from the debate on access to ICT and the incidence of terror attacks globally.

Hypothesis 1: Developed and globalized countries are facing more terrorism than developing countries.

This hypothesis is based on the argument that because of globalization is making the world a unipolar place and it is causing discomfort in the fundamentalist groups. These fundamentalists don't want to give up their culture, tradition and religion. Globalization, backed by the developed countries is supposed to be carrying the agenda of one world and one culture.

Hypothesis 2: ICT and especially internet has become a strong weapon for terrorists. Which means internet is efficiently used for the terrorist activities.

This theory is supported by the evidences that terrorists are using technology for many purposes. We will try to find out how effectively terrorists are using internet? The only way to find out the impact of internet or ICT on terrorism is to find out the involvement of these technologies in terrorism. By following this theory, we would be expecting that countries with more exposure to internet and ICT are facing more terrorism.

Hypothesis 3: Islamic terrorism is a growing threat to the West.

Again this hypothesis is supported by the Islamic terrorist groups around the world. Every time the most popular terrorist group Al Qaeda issues a threat, it is directed to the West. So we will try to find out whether Islamic terrorist groups are operating in the Western countries and are their activities growing with the passage of time?

6.2 Terrorist Incidents

In this section I will present a detailed table showing the terrorist attacks all over the world. The terrorist attacks are recorded by Global terrorism database (GTD) and I will present the incident list from 1991 till 2007. The table shown below is the simplified form extracted from GTD showing only the number of terrorist attacks and the casualties. It should be noted that data for 1993 is not available and thus missing.

Table 6.1: Terrorist attacks in different countries from 1991 to 2007

COW	WBC CODE	COUNTRY	TOTAL TERRORIST ATTACKS*	FATALITIES/ CASUSLTIES **
700	AFG	Afghanistan	1042	6752
339	ALB	Albania	69	186
615	DZA	Algeria	1640	15472
540	AGO	Angola	209	2943
160	ARG	Argentina	134	658
371	ARM	Armenia	15	97
900	AUS	Australia	43	58
305	AUT	Austria	36	17
373	AZE	Azerbaijan	36	380
31	BHS	Bahamas	2	1
692	BHR	Bahrain	39	37
771	BGD	Bangladesh	557	6332
53	BRB	Barbados	1	6
370	BLR	Belarus	6	2
211	BEL	Belgium	40	42
80	BLZ	Belize	5	3
434	BEN	Benin	8	8
760	BTN	Bhutan	1	4
145	BOL	Bolivia	86	50
346	BIH	Bosnia	141	200
571	BWA	Botswana	1	1
140	BRA	Brazil	158	246

* The data is from 1991 to 2007.Data for 1993 is not available.

** Data for many attacks was not known and thus regarded as 0 (Unknown)

Source: GTD (Global Terrorism Database) created by START (Study of Terrorism and Responses to Terrorism), A center of excellence of the US Department of Homeland security based at the University of Maryland. http://www.start.umd.edu/gtd/

COW	WBC CODE	COUNTRY	TOTAL TERRORIST ATTACKS*	FATALITIES/ CASUSLTIES **
835	BRN	Brunei Darussalam	1	1
355	BGR	Bulgaria	29	22
439	BFA	Burkina Faso	2	3
516	BDI	Burundi	341	5787
811	KHM	Cambodia	236	1282
471	CMR	Cameroon	20	123
20	CAN	Canada	26	40
402	CPV	Cape Verde	Data not available	Data not available
482	CAF	Central African Republic	10	34
483	TCD	Chad	35	697
155	CHL	Chile	311	101
710	CHN	China	128	1051
100	COL	Colombia	3051	10892
581	COM	Comoros	5	3
484	COG	Congo	22	207
94	CRI	Costa Rica	8	11
344	HRV	Croatia	46	303
40	CUB	Cuba	30	49
352	CYP	Cyprus	42	10

COW	WBC CODE	COUNTRY	TOTAL TERRORIST ATTACKS*	FATALITIES/ CASUSLTIES **
315	CZE	Czech Republic	13	7
490	ZAR	D.R. Congo	85	985
390	DNK	Denmark	13	1
522	DJI	Djibouti	13	342
42	DOM	Dominican Republic	41	79
860	TMP	East Timor	33	61
130	ECU	Ecuador	80	30
651	EGY	Egypt	420	1709
92	SLV	El Salvador	569	1679
411	GNQ	Equatorial Guinea	1	1
531	ERI	Eritrea	5	25
366	EST	Estonia	13	12
530	ETH	Ethiopia	66	1410
950	FJI	Fiji	9	1
375	FIN	Finland	4	10
220	FRA	France	293	401
481	GAB	Gabon	3	5
420	GMB	Gambia	3	15
372	GEO	Georgia	131	527

COW	WBC CODE	COUNTRY	TOTAL TERRORIST ATTACKS*	FATALITIES/ CASUSLTIES **
255	DEU	Germany	550	529
452	GHA	Ghana	16	30
350	GRC	Greece	357	230
55	GRD	Grenada	0	0
90	GTM	Guatemala	349	383
438	GIN	Guinea	10	161
404	GNB	Guinea-Bissau	7	42
110	GUY	Guyana	10	8
41	HTI	Haiti	169	452
91	HND	Honduras	93	209
310	HUN	Hungary	38	17
395	ISL	Iceland	0	0
750	IND	India	2669	24878
850	IDN	Indonesia	406	3082
630	IRN	Iran, Islamic Republic of	142	930
645	IRQ	Iraq	2933	49523
205	IRL	Ireland	51	18
666	ISR	Israel	606	5648
325	ITA	Italy	161	141
437	CIV	Ivory Coast	40	226
51	JAM	Jamaica	21	56
740	JPN	Japan	123	6763
663	JOR	Jordan	39	201
705	KAZ	Kazakhstan	8	13
501	KEN	Kenya	91	4891
690	KWT	Kuwait	31	49
703	KGZ	Kyrgyz Republic	20	21
812	LAO	Lao People's Democratic Republic	14	55

COW	WBC CODE	COUNTRY	TOTAL TERRORIST ATTACKS*	FATALITIES/ CASUSLTIES **
367	LVA	Latvia	15	38
660	LBN	Lebanon	501	1617
570	LSO	Lesotho	4	1
450	LBR	Liberia	22	190
620	LBY	Libya	6	12
368	LTU	Lithuania	8	3
212	LUX	Luxembourg	3	0
343	MKD	Macedonia	86	82
580	MDG	Madagascar	20	85
553	MWI	Malawi	4	33
820	MYS	Malaysia	8	3
781	MDV	Maldives	2	13
432	MLI	Mali	37	275
338	MLT	Malta	4	5
435	MRT	Mauritania	3	43
590	MUS	Mauritius	0	0
70	MEX	Mexico	286	914
359	MDA	Moldova, Republic of	18	62
712	MNG	Mongolia	0	0
600	MAR	Morocco	18	192
541	MOZ	Mozambique	63	682
775	MMR	Myanmar	134	978
565	NAM	Namibia	28	113
790	NPL	Nepal	359	3073
210	NLD	Netherlands	46	12
920	NZL	New Zealand	10	3
93	NIC	Nicaragua	181	230
436	NER	Niger	44	298
475	NGA	Nigeria	205	1515
731	PRK	Korea, DPR	1	7
385	NOR	Norway	9	3

COW	WBC CODE	COUNTRY	TOTAL TERRORIST ATTACKS*	FATALITIES/ CASUSLTIES **
698	OMN	Oman	0	0
770	PAK	Pakistan	2198	14046
95	PAN	Panama	75	63
910	PNG	Papua New Guinea	39	105
150	PRY	Paraguay	27	38
135	PER	Peru	1301	4207
840	PHL	Philippines	1124	6707
290	POL	Poland	25	29
235	PRT	Portugal	6	19
694	QAT	Qatar	4	15
360	ROM	Romania	3	9
365	RUS	Russian Federation	925	7913
517	RWA	Rwanda	131	3805
990	WSM	Samoa	1	0
403	STP	Sao Tome and Principe	Data not available	Data not available
670	SAU	Saudi Arabia	48	1145
433	SEN	Senegal	72	382
591	SYC	Seychelles	0	0
451	SLE	Sierra Leone	88	891
830	SGP	Singapore	3	8
317	SVK	Slovakia	17	17
349	SVN	Slovenia	6	3
940	SLB	Solomon Islands	4	4
520	SOM	Somalia	331	1982
560	ZAF	South Africa	711	3499
732	KOR	South Korea	19	437
230	ESP	Spain	783	3107
780	LKA	Srilanka	942	14560

COW	WBC CODE	COUNTRY	TOTAL TERRORIST ATTACKS*	FATALITIES/ CASUSLTIES **
56	LCA	St. Lucia	Data not available	Data not available
57	VCT	St. Vincent and the Grendines	Data not available	Data not available
625	SDN	Sudan	108	1585
115	SUR	Suriname	9	3
572	SWZ	Swaziland	8	3
380	SWE	Sweden	31	17
225	CHE	Switzerland	29	54
652	SYR	Syria	7	78
713	TWN	Taiwan	40	117
702	TJK	Tajikistan	165	1323
510	TZA	Tanzania	6	98
800	THA	Thailand	798	2660
461	TGO	Togo	45	107
52	TTO	Trinidad and Tobago	12	24
616	TUN	Tunisia	9	34
640	TUR	Turkey	1662	5964
701	TKM	Turkmenistan	Data not available	Data not available
500	UGA	Uganda	218	2737
369	UKR	Ukraine	29	61
696	ARE	United Arab Emirates	3	1
200	GBR	United Kingdom	1264	3070
2	USA	United States	382	4232
165	URY	Uruguay	23	5
704	UZB	Uzbekistan	19	221
935	VUT	Vanuatu	2	Data not available
101	VEN	Venezuela	149	175
816	VNM	Vietnam	10	28

COW	WBC CODE	COUNTRY	TOTAL TERRORIST ATTACKS*	FATALITIES/ CASUSLTIES **
679	YEM	Yemen	152	409
345	YUG	Yugoslavia	175	355
551	ZMB	Zambia	21	12
552	ZWE	Zimbabwe	14	96

The table presented above has a complete data for all the terrorist attacks carried out around the world. It gives us an idea about those countries that have faced terrorism the most.

6.3 Empirical analysis of terrorist attacks around the world

In this section, I will present the results that I got from the empirical analysis of the data using the negative binominal regression. The terrorist incidents data, taken from GTD is combined and analyzed with other variables. It gives us a clear picture about the terrorist incidents under different conditions. We are also able to evaluate the effect of internet on terrorist activities net of the control variables. The analyses will help us confirm or disconfirm the stated hypotheses.

Table 6.2, presents the results for the first set of analyses which looks at whether or not the internet promotes higher terrorist activity, and whether or not this activity is likely to be greater among Islamic countries.

Table 6.2: Terrorist incidents from 1991 to 2006 in relevance with Islamic terrorism and Internet subscription.

Table is split on two pages

	(1)	(2)	(3)	(4)	(5)	(6)
	Incidents	Incidents	Incidents	Incidents	Incidents	Incidents
Civil war ongoing	1.843	1.940	1.897	1.903	1.824	1.823
	(9.32)***	(8.95)***	(8.97)***	(8.99)***	(8.27)***	(8.78)***
Civil peace years	-0.022	-0.019	-0.021	-0.021	-0.021	-0.021
	(3.39)***	(2.88)***	(3.17)***	(3.17)***	(3.06)***	(3.14)***
Total population	0.611	0.607	0.598	0.596	0.577	0.558
	(10.78)***	(10.70)***	(10.64)***	(10.56)***	(10.15)***	(10.60)***
GDP per capita	0.281	0.412	0.415	0.420	0.408	0.399
	(3.96)***	(4.76)***	(4.75)***	(4.71)***	(4.55)***	(4.69)***
Under Democratic rule	0.023	-0.096	-0.072	-0.077	-0.098	-0.091
	(0.12)	(0.46)	(0.33)	(0.36)	(0.45)	(0.43)
Under Autocratic rule	-0.759	-0.751	-0.706	-0.697	-0.698	-0.536

	(2.80)***	(2.43)**	(2.27)**	(2.21)**	(2.25)**	(1.75)*
Internet subscription per capita		**-0.025**	**-0.025**	**-0.025**	**-0.025**	**-0.024**
		(2.62)* **	**(2.62)*** **	**(2.64)*** **	**(2.57)** **	**(2.65)*** **
Muslim majority population			**-0.001**	**-0.001**	**-0.003**	**-0.009**
			(0.43)	**(0.30)**	**(1.20)**	**(3.19)*** **
Islamic terrorist groups					**0.414**	**-0.091**
					(2.43) **	**(0.53)**
Islamic terrorist groups in Muslim majority countries						**0.015**
						(3.94)* **
Muslim majority countries with internet subscription per capita				**-0.001**		
				(0.38)		
Constant	-9.377	-10.764	-10.612	-10.614	-10.231	-9.764
	(9.59)***	(9.79)***	(9.82)***	(9.82)***	(9.33)***	(9.31)***
Observations	2062	1719	1672	1672	1672	1672

Note: Negative binominal regression. Robust z-statistics in parenthesis. Asterisks (*, **, ***) indicate significance at the 10%, 5% and 1% level, respectively.

As seen in the table, there are a number of statistically highly significant effects explaining the number of terror attacks. The first column gives us a picture of the terrorist attacks under the main control variables that we have used. For instance during civil war times, the terrorist incidents are far more than those during periods of civil peace. This is totally understandable because armed conflicts always give birth to terrorist incidents. Also, countries suffering civil wars are likely to be weakened and invite other groups to carry out terror attacks.

In the first column if we look at the total population variable, we would see that the higher the size of the population the more terrorist incident are likely to occur. We can see that it is statistically significant at the 1% level. It means that countries below the mean of population are likely to suffer a 61% reduction in the rate of incidence compared to those above the mean.

Further, higher incomes as measured by GDP per capita face more terrorism than others. This is also statistically significant at the 1% level, which means that richer countries are likely to host a higher rate of terrorism (28%) than are poorer countries.

Moreover, countries under democratic rules face no higher or lower terrorist attacks than those under autocratic conditions and the left out category of partly democratized countries. However, fully autocratic regimes face a statistically highly significant chance of lower terror attacks that either fully democratic regimes or partly democratized regimes.

In column 2, I enter the values for internet subscription per capita. We can see that access to internet lowers the incidence of terror attacks, net of income and democracy. Based on this value, we can say that internet and ICT might be used for terrorist activities but the more internet usage in a country, the lower the number of terror attacks. When we interact the size of the Muslim population with internet access, the effect is negative but statistically not significant. This suggests that access to internet does not make majority Islamic countries more vulnerable to terror attacks.

From column 5 and 6 we can see that Islamic terrorist groups have a high impact on terrorist incidents as well as in Muslim majority countries. Here one point must be noted about the concept of being a Muslim terrorist attack or not. Since I wanted to know the level of the threat that Muslim terrorist groups pose to the West and I had no interest in the terrorist attacks carried out by any other group, for instance like Irish Republican Army, I counted only Muslim terrorist attacks per year. To make it clear let me present an example.

For example, if there were 50 terrorist attacks in a country A in year 1991 and only 1 terrorist attack was carried out by a Muslim group or individual, I counted Muslim terrorist impact as positive, although 49 terrorist attacks were carried out by other groups. So somehow the calculation of the terrorist attacks is biased towards Muslim terrorist groups.

Despite this strong assumption that all terror attacks were carried out by Islamic groups if an Islamic group existed in a country, the results in table 6.2 are interesting. Notice that even when I enter the presence of an Islamic terror group, richer countries have more terror attacks,

signifying that rich countries suffer terror attacks from groups that are believed not to be Islamists. I test this further below when I look specifically at Western countries. What is interesting is that Islamic groups are likely to be the major offenders in countries that are majority Muslim, meaning that even if the internet does not matter within Islamic countries they tend to be harmed by groups calling themselves Islamist.

Table 6.3: Terrorist incidents from 1991 to 2006 in relevance with Western countries and Islamic terrorism.

	(1)	(2)	(3)	(4)
	Incidents	Incidents	Incidents	Incidents
Civil war times	1.981	1.900	1.895	1.895
	(9.73)***	(8.76)***	(8.67)***	(8.67)***
Civil peace times	-0.023	-0.022	-0.022	-0.022
	(3.91)***	(3.83)***	(3.84)***	(3.84)***
Total population	0.558	0.524	0.519	0.519
	(9.61)***	(9.59)***	(9.47)***	(9.47)***
GDP per capita	0.298	0.265	0.259	0.259
	(3.59)***	(3.21)***	(3.12)***	(3.12)***
Under Democracy rule	-0.107	-0.088	-0.089	-0.089
	(0.56)	(0.44)	(0.45)	(0.45)
Under Autocracy rule	-0.635	-0.683	-0.692	-0.692
	(1.94)*	(2.15)**	(2.19)**	(2.19)**
Internet subscription per capita	-0.032	-0.032	-0.031	-0.031
	(3.41)***	(3.42)***	(3.47)***	(3.47)***
Western countries *	**0.989**	**1.129**	**1.184**	**1.184**
	(2.45)**	**(2.74)*****	**(2.82)*****	**(2.82)*****
Islamic terrorist groups		**0.478**	**0.548**	**0.548**
		(2.63)***	**(2.77)*****	**(2.77)*****
Islamic terrorist groups in the West			**-0.653**	
			(1.73)*	
Islamic terrorist groups in the West with year wise				**-0.0001**
				(1.72)*
Constant	-9.371	-8.686	-8.567	-8.567
	(8.93)***	(8.72)***	(8.55)***	(8.55)***
Observations	1680	1680	1680	1680

Note: Negative binominal regression. Robust z-statistics in parenthesis. Asterisks (*, **, ***) indicate significance at the 10%, 5% and 1% level, respectively.

*Western countries are North America, Europe and Japan.

In table 6.3, from column 1, we can see that the Western countries face high terrorist incident rates. According to our definition of the Western countries this is quite similar to the previous table in which we see that rich countries face more terrorism than others. So the Western countries would normally face more terrorist incidents.

In column 2 of the above table, we can see that Muslim terrorist groups have a positive impact on terrorist incidents. It is also similar to the results in table 6.2. The most surprising aspect of this table is that when I assess the Muslim terrorist groups accused of attacks within the Western countries, we get a lower impact. In other words, although Muslim terrorist groups have a positive impact on the overall terrorist incidents, they are less likely to be associated in Western countries with higher terrorist incidents. Here I would like to remind the readers that the counting of terrorist attacks is biased against the Muslim terrorist groups but still they have a negative impact. It doesn't necessarily mean that Muslim terrorist groups are not attacking The West but it does mean that the terrorist incident that other groups or individual are carrying out are far more than that of the Muslim terrorist groups.

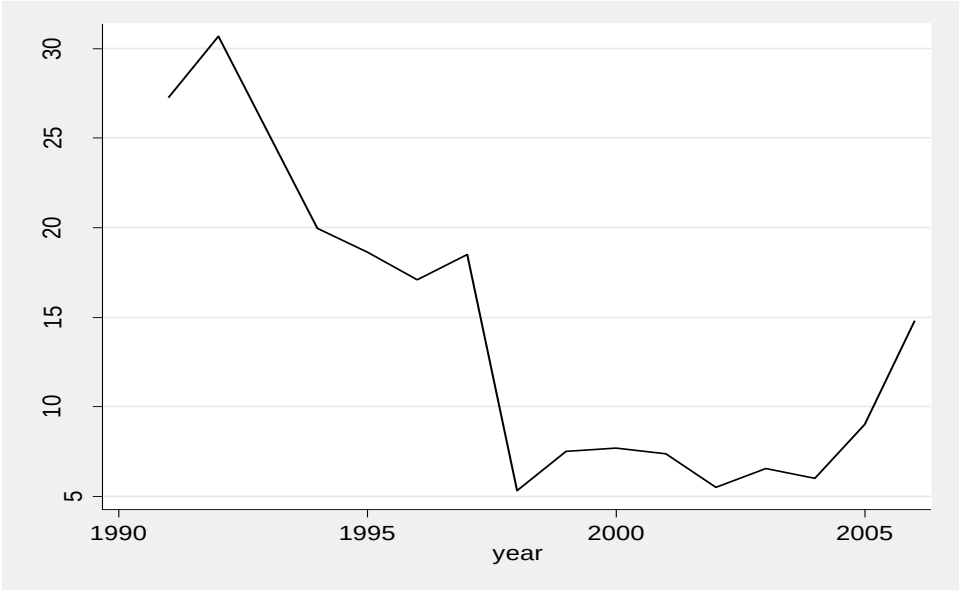
Column 4 gives us similar readings, Involvement of Muslim terrorist groups in the West with each passing year.

The overall impact is again negative. In other words, the terrorist attacks that are being carried out in the West by Muslim terrorist groups are declining with the passage of time.

6.4 Graphical representation of terrorist attacks over time

The graph given below represents the overall terrorist attacks from 1991 to 2006. We can see that the terrorist attacks were really high during 1990's and then they declined. There is a slight increase in it during 2005 and 2006 but overall it is still far below the level of 1990.

Figure 6.1: Graph showing terrorist attacks from 1990 to 2006.



Chapter 7 Conclusion

Terrorism is not a new phenomenon and even though it has been used since the beginning of recorded history, it can be very hard to explain its causes and other aspects. Almost all the researchers agree that terrorism has always been a complex phenomenon but since 1990's terrorism has changed profoundly making it more difficult to interpret. New foes with new motivations and equipped with new technologies have totally changed the overall picture of terrorism. All this development needs us to change the direction of our research too. In order to tackle this problem, we need to have clear motivations and goals. We can't lose this war against terrorists and for this purpose we have to adapt ourselves to the new ways of terrorism.

In this thesis, I have tried to find answers to some of the questions related to terrorism. As mentioned in the first chapter, the aim of the study was to answer three questions based on the empirical analysis of the terrorist incidents from 1990 to 2006. First I wanted to know the overall role of globalization as represented as access to new media as an explanation for growing terrorism. Since pessimists about globalization believe that globalization is causing social fragmentation in the developing countries and giving rise to violent fundamentalist groups that use terrorism as a weapon. This argument suggests that terrorism should be higher in areas that are Western and among Islamic states that have more access to internet.

The large data analysis shows, however, that richer countries are generally more likely to attract terrorism than relatively poorer countries. The difference is 28%, which can't be overlooked. In other words, richer countries face 28% more incidents of terrorism than others, which is somehow understandable. Now there could be many causes for this increase but the obvious one is that rich countries are significantly involved in the process of globalization. Critics of globalization argue that rich countries want to impose their agendas and their politics on poor

countries while using the cover of globalization and that could cause discontent among the fundamentalists. Looking at the results, there might be different causes of this increase in terrorist incidents towards rich countries but it somehow justifies the argument of the critics.

We can say that globalization might not be the main reason for terrorism in developed countries but definitely we can't overlook it.

Another aim of the thesis was find out the role of new technologies especially ICT in terrorism. Since the empirical analysis is not conclusive in answering this question, I answered it mainly by using qualitative study. The empirical study shows us that there is not much of impact of ICT (internet) on terrorist incidents. It shows us negative impact of terrorism on countries with more internet subscription. In other words, countries with more exposure to internet face less terrorism. It is clear that internet subscription would be more in developed and rich countries than others and we have a positive and quite significant impact of terrorist incidents on developed countries. But when we combine it with internet subscription then its impact is negative. Now this result tells us that developed countries face terrorism, regardless of its exposure to internet. But it doesn't mean that ICT has no role in terrorism at all. We can see how effectively terrorists use technology in Pakistan.

There might be another reason for this difference. We can easily notice that under developed countries have less control over new technologies and internet than developed countries and thus these new technologies are likely to be abused in these under developed countries. In 2008 in Pakistan, for instance, the government blocked more than 5 millions of illegal mobile connections. A Pakistan newspaper, The Dawn reported on 1st June 2008,

''A Senate body was Saturday said the Pakistan Telecommunication Authority (PTA) has blocked 5.6 million mobile phone connections during a campaign against unverified connections. PTA Chairman Maj-Gen (retired) Shahzada Alam Khan told the sub-committee of the Senate's Standing Committee on Interior that efforts were underway to ultimately

block all unverified connections and the completion of the process would take another three to four weeks. He apprised the members of the committee which met with its convener Senator Mohammad Talha Mahmood that an online verification system would become operational from June 1 under which details of customers would be verified from the National database and registration authority (NADRA) through sms'' [44].

The third question which I tried to answer is the involvement of Islamic terrorist groups in the West. Now I already explained that while counting the terrorist attacks, I was biased against Islamic terrorist groups and I recorded a positive impact even if they had one terrorist attacks out of 100 in a year. But even with this biased calculation, the results are surprisingly interesting. Based on the results from the empirical analysis, we can see that Islamic terrorist groups have a negative impact on the West. It doesn't mean that they never attacked the West but it means that if we look at the overall terrorist attacks in the West and we figure out those carried out by Islamic terrorist, the result would be declining.

Based on the empirical analysis, we can conclude that Islamic terrorist groups might be a threat to the West but they are certainly not a growing threat. Of course they are operating in other countries especially in Muslim majority countries and they have quite significant impact on the overall terrorist incidents. But as of now the Western countries should not only focus on the Islamic terrorist groups but also other aspects which might be causing this increase in terrorism.

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