

**Sociology & Cultural Research Review (JSCRR)**

Available Online: <https://scrr.edu.com.pk>

Print ISSN: [3007-3103](#) Online ISSN: [3007-3111](#)

Platform & Workflow by: [Open Journal Systems](#)

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**TECH'S ROLE TO COUNTER TERRORISM IN PAKISTAN**

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**ABSTRACT**

*Pakistan's prolonged and complex struggle with terrorism has persisted for multiple decades, deeply rooted in intricate regional dynamics, historical conflicts, and multifaceted domestic challenges. While strategic military operations have achieved significant success in dismantling and weakening prominent terrorist organizations, the fundamental challenge of countering extremist ideologies continues to demand innovative solutions. This comprehensive paper investigates the transformative potential of modern technology in revolutionizing Pakistan's counter-terrorism strategy and security infrastructure. Through detailed analysis of cutting-edge technological advancements—including artificial intelligence-driven surveillance systems, sophisticated data analytics platforms, comprehensive biometric databases, and advanced digital monitoring mechanisms—we explore how these integrated technological tools enhance national security capabilities and intelligence gathering. Applying the theoretical framework of Rational Choice Theory (RCT), this research demonstrates conclusively that technology-based approaches significantly increase operational risks and implementation barriers for terrorist activities while simultaneously fostering peaceful alternatives and social integration. This paper presents compelling evidence that implementing comprehensive technology-driven approaches alongside existing security frameworks offers Pakistan the most promising and sustainable path toward achieving lasting stability and national security in an increasingly complex regional environment.*

**Keywords:** *Terrorism, Technology, Deterrence, Soft Power, Big Data*

## **Introduction**

Going back in time, Pakistan has suffered from terrorism since its involvement in the Afghan Soviet War in the 1980s, which had disastrous consequences, including the rise of madrassah culture and an increase in foreign fighters. The Taliban and Al Qaeda have emerged in Pakistan, supported by religious instability and proxy wars sponsored by domestic terrorists. Pakistan has struggled with terrorism for many years, including from both domestic and foreign terrorists that pose a threat to its security (Hussain & Bhatti).

The spread of terrorism in Pakistan began when Pakistan sided with the West against the Soviet Union following the Soviet invasion of Afghanistan. This was not a haphazard or accidental decision; rather, it was Pakistan's own, and the primary goal of the support was to strengthen ties with the superpower. This not only contributed to the spread of terrorism but also strained relations with the Soviet Union, and the Afghan refugees had become a further issue for Pakistan. Following the 9/11 war, terrorism had a significant impact on Pakistan, while acts of terrorism that were sponsored by religion, especially in Baluchistan and KPK, are a cause for grave concern.

The situation in Pakistan deteriorated after the 2001 attack in Afghanistan, when Pakistan became the battleground for the US-led "Global War on Terror," which was not only a US war but a global war on terror with the backing of NATO allies. Pakistan had no choice but to assist the US in this conflict, and the country faced a massive crackdown on militant groups. The military then began operations in tribal areas, particularly those where terrorism has its roots, such as FATA, North Waziristan, and South Waziristan. (Jones, 2007). These operations targeted the diverse extremists and violent groups that includes Tehrik-e-Taliban (TTP), Al-Qaeda and Haqqani network. These ideologies have developed the stronger foothold in these areas on the basis of religion Islamist Jihad. Pakistan had to deal with several repercussions after that. The 2008 Marriot hotel explosion, the Jinnah International Airport attack in Karachi, and the Army Public School (APS) School attack in Peshawar on December 16, 2014, are just a few of the numerous terrorist incidents that the nation has experienced. In Pakistani history, this day is referred regarded as the Black Day. The targets of this strike were the military-controlled areas.

To address the ongoing terrorist attacks, the Pakistan military initiated operations known as Operation Zarb-e-Azb and Operation Raduul Fasaad. Operation Zarb-e-Azb was launched in response to the attack on Jinnah International Airport located in North Waziristan. The primary objective of this operation was to eradicate terrorist groups such as TTP, Al-Qaeda, and others. The operation succeeded with the cooperation of the government and international assistance from the US and China, resulting in the clearance of North Waziristan. This operation involved the elimination of 3,500 militants and led to the displacement of 1 million individuals from the region (Sherazi, 2014). Despite having success, the area still faced challenges in terms of social and economic challenges.

Conversely, terrorist groups play a significant role in pursuing their objectives. These groups comprise Tehrik-e-Taliban (TTP), Jaish-e-Mohammad (JEM), Sipah-e-Sahaba, Lashkar-e-Jhangvi, and the Islamic State Khorasan Province (ISKP). In 2022, incidents of terrorism rose by 46.5% in the country compared to previous years (Terrorism in Pakistan: A Statistical Analysis, 2023). These organizations work within Pakistan. While military is trying to address the terrorism threat, it has escalated and violence and this the point where Pakistan needs to change its priorities and use both technology and military support to counter the terrorism. Without technology it would be difficult to tackle these threats.

#### **Technological advancement:**

Technological advancement brought ground breaking ideas for criminals and terrorists. They use social media to spread violence and propaganda. As far as social media is concerned, platforms like facebook, Instagram and Twitter used for the interaction purpose provides them opportunity to spread violence and create threats among people. Not only social media, but terrorist organizations also uses the play station games and video games to communicate with each other as it is hard to decrypt the information travelled through these games. With the help of big Data, Pakistan can counter this situation through social media monitoring, transaction histories and many more.

The evolution of artificial intelligence offers Pakistan unprecedented opportunities to enhance its counter-terrorism capabilities. Advanced computer vision systems, deployed across critical infrastructure and public spaces, can analyze surveillance footage in real-time to detect suspicious behavior patterns, identify known terrorists through facial recognition, and monitor unusual

crowd movements that may indicate imminent threats. Natural Language Processing (NLP) algorithms can systematically analyze social media posts, online forums, and digital communications in multiple regional languages—including Urdu, Pashto, and regional dialects—to identify extremist content, recruitment attempts, and potential radicalization patterns. Machine learning models, trained on historical attack data and intelligence reports from operations like Zarb-e-Azb and Radd-ul-Fasaad, can predict potential terrorist activities by recognizing subtle patterns in financial transactions, travel behaviors, and communication networks. The integration of biometric data from NADRA with AI-powered predictive analytics creates a robust system for early warning and threat assessment. These technological tools, when combined with traditional intelligence gathering, enhance Pakistan's ability to prevent attacks before they materialize while respecting privacy concerns and civil liberties through proper oversight mechanisms.

**Theoretical framework:**

The "rational choice theory" (RCT) is a theory that best describes the relationship between terrorism and counter terrorism strategies. I am applying the rational choice theory to this research. This theory suggests that terrorist acts as a rational agent, who calculate the cost and benefit analysis before doing any kind of act. Under the lens of this theory, RCT can explain how technology can alter the cost and benefit analysis and helps Pakistan to counter terrorism.

The main key points under the RCT includes the e strategies and benevolence strategies.

**Deterrence strategy:**

According to the deterrence strategy, this strategy increases the risk of cost to indulge themselves in terrorism. As due to deterrence, the terrorist pays high cost of their activities regarding terrorism. The cost includes the risk of capturing, risk of life and other challenges as well. The measures that can be taken in deterrence strategy to combat terrorism in Pakistan includes the monitoring of online communication, using big data analytics to prevent any kind of attack, enhancement of monitoring in remote areas, CCTV usage, biometric databases that includes NADRA as well.

**Benevolence strategy:**

In terms of benevolence strategy, this strategy reduces the risk of non-violent and improves the socio economic opportunities. This strategy involves the social media monitoring and by identifying the radical content online and moves towards de-radicalization.

Under the lens of RCT, this strategy minimizes the radicalization of extremist groups and makes the alternatives towards the terrorist attack before it happens.

On the other hand, this strategy introduces the digital platforms that provides online education and employment that lowers the cost non-violent activities and involves people towards the active civic engagement.

Thus, technological advancement in Pakistan can affect terrorist by altering the cost and benefits of terrorism and promoting the non-violent alternatives. (ANDERTON & CARTER)

### **METHODOLOGY:**

Qualitative content analysis has been used for this research. This research is exploratory. The historical, descriptive, and exploratory approach has been used for this research. For the data collection, a secondary source has been used. One of the major sources of data are books, published articles, and newspapers. For the data analysis, theory testing approach QCA, direct content analysis has been used. Furthermore, within the direct content analysis, a manifest approach has been used

### **Counter terrorism strategies:**

#### **Soft power approach:**

Soft power approach is basically the mutual assistance goal towards the end of terrorism and its roots. In this strategy, many actors of states are involved but the main goal is common to end the terrorist ideology. If we notice the kinds terrorism, ideologically motivated terrorism is observed. In soft power approach, the main purpose is to destroy the terrorism by making the local population against the terrorist organization within that country. This strategy requires the deep understanding of culture and society of that country. If we apply the soft power strategy in a state like US and UK, that would not be possible as the culture is very vast and its deep understanding requires a lot of time. But if it is applied to the developing countries like Iraq, Afghanistan, Pakistan, Libya and Iran, this approach works. (Gingell)

#### **Safe City Projects:**

Pakistan has launched safe city projects. The main aim behind the safe city project is to enhance the law enforcement and public safety in Pakistan. In this project, Pakistan has launched CCTV cameras in different cities and focus on data analytics like NADRA to improve the national security policies. (Chaudhary, 2021)

#### **Big Data and Pakistan:**



In the present era, technology is getting advanced and data is being generated through terabytes, zettabyte and yottabytes. Big data has been generated through various sources and now a days it became difficult for agencies and companies to have a quick access on information in case of emergency because a lot of data has been generated through this generation. It is very difficult to have a quick response in case of emergency or crisis.

Now, terrorism has been spread worldwide and it became a challenge for the international community especially for the developing countries like Pakistan, Iran, Iraq, Afghanistan and others. Most of the sanctions and nuclear proliferation treaties of arms control and disarmament have been failed to reduce and to diminish the terrorism from the world. Thus, technological advancement should be used in this manner to counter terrorism from the whole world.

In case of Pakistan, the tensions have been escalated after the 9/11 war, Pakistan have been facing the drastic effects of terrorism within and outside the boundaries. Pakistan had countered all these terrorist attacks through the help of military. But the problem is that Pakistan is not able to encounter the terrorist attack before its happening. Thus, it's an alarming sign for Pakistan to change its strategies towards the cyber area. Big data is one of the sources which Pakistan should utilize to cover all its drawbacks and losses that Pakistan faced during the previous decades. Unluckily, a little amount of works has been done through big data in Pakistan. (Baloch, 2024)

Big data has been a source of growth for governance yet Pakistan lacks its potential to enhance the benefits from it. According to the international community, big data can also impact the decision making. They used big data to make informed decision making and improves its efficiency. But Pakistan is struggling in this sector due to lack of policy guidance and cooperation among the key sector. There are approximately 600000 professionals of IT in Pakistan who performed a key role in IT sector and AI driven innovations. The national center of Artificial Intelligence shows that the talent exists in the country but the gap also does. To cover this gap, the cooperation should be needed between IT sector, research center and the government sector to to use big data in terms of positive ways to counter terrorism. (Mukhtar)

Pakistan is on the grey list of Financial Action Task Force (FATF). By using the methodologies of big data would help

Pakistan to get successful in money laundering cases. And it will be helpful for Pakistan to remove its name from grey list. (FATF)

In terms of Pakistan, various firms have been owned by the private companies rather than the national ones. These firms are utilizing big data analytics to enhance their business in terms marketing and IT sector. Pakistan should utilize the generation of big data from these sites in order to counter the terrorist efforts and many more. Pakistan has already done with a lot of success in terms of military aspects. Now is the time to utilize its efforts towards cyber area and use of technology as the country already lacks behind it.

#### **Use of AI:**

The use of digital alternatives like AI is crucial to combat terrorism. The use of AI powered algorithms plays a very important role in counting terrorism efforts. To reduce the terrorist attacks, the following AI measures should be applicable to get rid of terrorism.

#### **Predicting the timing and location of terrorist attacks:**

The artificial intelligence can analyze data from social media apps like TikTok, twitter, Instagram and many other, financial transactions, travel patterns and internet surfing activity. These are used to indicate patterns that can indicates the time and location of terrorist attack. There are different models of AI created by experts for this purpose. For instance, one start up claimed that its models can predict the suicide attack with 72% accuracy. Thus, this is used to predict the terrorist attack before its happening.

#### **Susceptibility to Radicalization:**

Most of the companies developed the AI tools to reach out the vulnerability of extremist groups. This can be used to access the propaganda and goals of extremist groups. This is basically a redirect method which targets the use of video sharing sites which may be vulnerable towards the propaganda from terrorists and thus redirects them towards videos access counter narrative.

#### **Identification of terrorists:**

AI can be used for the identification of terrorists. Through its different features like meta data and algorithms, this can identify the terrorists through online behavior. It provides the real time data to enhance the counter terrorism strategies. According to the US national security agency (SKYNET) Shows that an AI algorithm was used to analyze the metadata of 55 million of mobile phone users in Pakistan that results into the approximately 15000 individuals could become terrorists out of population of 200 million people. (McKendrick)

But on the other hand, AI also has some drawbacks and disadvantages. It affects the privacy of millions of people. The private videos of many people have been leaked with the help of AI. The freedom of citizen is at stake and government should take security measures regarding this privacy concerns. This is against the ethics. In terms of Pakistan, AI can be used more in terms of negativity rather than for the positive means. Pakistan should utilize AI tools to combat the terrorism efforts and terrorist attacks before its happening.

#### **Games as a tool for communication:**

Terrorist use play station games as a tool for communication. Video games and terrorism are in close relations with each other. Terrorists' organizations created the video games to achieve their goals especially during the times of war. For example, during the 9/11 war on terror, terrorist used a video game known as Splinter Cell by the terrorist to communicate with each other. On the other hand, games like American Army, Modern Warfare and Medal of Honor has also been used for this purpose. Many organizations like Hezbollah, Al Qaeda has also created their own video games. In 2006, Al Qaeda created a video game known as Quest for Saddam and another game Quest for Bush to achieve their desired goals of capturing Sadaam Hussain and killing the Iraqi soldiers. (Rawi, 2018)

The main purpose of using of video games as tool of terrorist communication is that it is hard to decrypt the information travelled through these video games and thus it became these video games. The extremist groups use the platforms steam, Discord and Twitch for the purpose of Radicalization. They use these platforms to coordinate with each other and to spread the propaganda. Terrorist exploit these types of games to normalize violence and spread the hate narratives. (Lakhani, 2021)

#### **Findings:**

- 1) Pakistan's support towards the west always proved disastrous for Pakistan according to the history. The US led coalition in any war either soviet Afghan war or 9/11 proved worst for Pakistan and makes the country a battle ground for extremist retaliation.
- 2) The rise of Madrassah culture due to these terrorist organizations posed the serious impact on people of Pakistan especially in terms of education. As the Madrassah's teach them not to study as it leads them towards the western civilization.



- 3) Pakistan only depends upon military in terms of counter terrorism. Although military performed well and did many operations, but it can't stop a terrorist attack before its happening.
- 4) The rise of Pakistani Taliban after the 9/11 poses a serious threat for the national security of a country.
- 5) Pakistan should move towards technology as this modern era is the era of technology. Without moving towards this side, Pakistan can't tackle the situation by depending only upon military.
- 6) The terrorist organizations within Pakistan like TTP, Jaish-e-Mohammad, Sipah-e-Sahaba and Lashkar-e-Jhangvi should be tackled first as they are spreading more violence within the country and diverting the youngsters towards terrorism.
- 7) The use of technology like AI, Big Data, soft power strategies, safe city projects like CCTV and many more will be helpful to tackle all this situation.

**Recommendations:**

- 1) Pakistan should enhance and strengthen its technological infrastructure that includes the CCTV, AI driven facial recognition and drone surveillance to detect any kind of threat.
- 2) Pakistan should enhance the big data and implement it to monitor all kinds of activities through social media, financial transactions and travel history.
- 3) The use of AI algorithms to detect any kind of online radicalization to improve cyber security.
- 4) The country should increase its collaboration with IT professionals, government bodies and research institutions in order to bridge the national security gaps.
- 5) The should call for policy makers, law enforcement and program developers to engage with each other in order to reduce the terrorism from the state.
- 6) Pakistan should improve its legal framework especially in case of crimes related to terrorism and increase the effectiveness of NACTA.
- 7) Pakistan should establish mechanism for the regular evaluation of counter terrorism strategies and technologies to secure its national policy.

- 8) Pakistan should involve local communities in counter terrorism efforts by building trust and cooperation among civilian and security forces.
- 9) Pakistan should promote international collaboration by strengthening its ties with the international bodies like China, US and NATO bodies to counter the terrorism capabilities.

**Conclusion:**

The evolution of Pakistan's counter-terrorism strategy reflects a journey shaped by complex historical forces and challenging regional dynamics. From the transformative period of the Soviet-Afghan War through the watershed moment of 9/11, Pakistan's security landscape has undergone profound changes. The emergence of militant organizations like the Tehrik-e-Taliban Pakistan (TTP) and various extremist factions has presented unprecedented challenges to national security, compelling the state to continuously adapt its response strategies.

Military operations, most notably Zarb-e-Azb and Radd-ul-Fasaad, have demonstrated Pakistan's capability to disrupt and dismantle terrorist networks through conventional force. However, the devastating attacks on the Marriott Hotel in 2008 and the heart-wrenching tragedy at Army Public School in 2014 revealed the limitations of purely military solutions. These events catalyzed a fundamental shift in Pakistan's approach to counter-terrorism, highlighting the urgent need for a more comprehensive and nuanced strategy.

The integration of advanced technology presents a promising frontier in Pakistan's security framework. The sophisticated combination of artificial intelligence surveillance, advanced data analytics, and NADRA's robust biometric infrastructure offers unprecedented capabilities in threat detection and prevention. This technological evolution, viewed through the lens of Rational Choice Theory, fundamentally alters the strategic calculus of terrorist organizations, creating powerful deterrents while simultaneously establishing pathways for peaceful resolution.

Looking forward, Pakistan's success in combating terrorism depends on its ability to harmonize multiple approaches: leveraging cutting-edge technology, strengthening international partnerships, and addressing fundamental socio-economic challenges. By fostering collaboration with global partners, enhancing cybersecurity capabilities, and investing in human capital development, Pakistan can build a more resilient defense

against extremism. This multifaceted approach, combining technological innovation with social development, offers the most promising path toward sustainable security and lasting peace.

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