

# Explaining, Evaluating and Exploring India's Nuclear Weapons Program: Alternative Theoretical Approaches

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**Abstract**—India's nuclear weapons program can be considered as a puzzle. What is the reason for India's sudden decision to test its nuclear bomb in 1974? If security is the main reason for 1998 testing of nuclear bomb then why India did not go nuclear after losing a war with China in 1962? What explains the gap? Understanding this puzzle is necessary to understand the political, economic, cultural, geographical aspects of the nuclear weapons. To accomplish the task the study has taken four alternative approaches and to understand India's behavior towards the nuclear weapons program. They are: post-colonial modernity approach (where identity as a nation-state would be an important variable), ideational approach, (where morality is a significant variable), domestic politics approach (where individual leadership is an important variable), constructivist approach (where the study sought technological symbolism and organizational culture as important variables)

India was one of the important proponents of disarmament policy yet did not sign the Nuclear Non-Proliferation Treaty (NPT) and the decision to detonate a bomb in 1974 and 1998 could not be understood just through the security model. Going beyond realism, and then going beyond liberalism and taking into account of constructivism and critical approaches would give a holistic understanding of the puzzle. The study starts with the explanation of security approach as it was claimed to be the main reason for the detonation of the bomb, and then enter into the discourse of liberalism, where it says the regime change and leadership were the main reason. The study goes further to elaborate on technological symbolism as a crucial aspect of the leadership and the organizational culture. The ambivalent nature of India could not be explained in the isolation of moral attributes of India and the success and failures of ethical modernity and the identity which is attached to it (which is explained through the ideational and postcolonial modernity approach). The study is conducted by considering secondary sources like journals, books, periodicals and some primary sources like statements given by the officials of related countries in their government websites.

**Keywords:** India, Nuclear Weapons, Security, Symbolism, Nation-state Identity, Nuclear Non-Proliferation Treaty, Domestic Politics, Idealism.

## 1. INTRODUCTION

What is puzzle in international politics and in international relations theory? When a particular phenomenon could not be explained through existing theories, then that becomes a puzzle. In the same way, India's nuclear weapons program was ambiguous till 1998 and the phenomenon of India's decision-making was a puzzle, as it was neither predictable nor could be explained with existing theories. To accomplish the task of understanding India's behavior towards nuclear weapons program, the study has taken four alternative approaches. They are post-colonial modernity approach, ideational approach, domestic politics approach and constructivist approach.

The common and most understood idea that nuclear weapons were built considering national security was just a perception and thus not valid. The security approach (states being insecure) of understanding the reason for building nuclear weapons by states is flawed or could not be an absolute explanation [8]. Because India clearly took a gap of almost a decade for testing a nuclear bomb with a low yield to that of China's nuclear tests in 1964<sup>1</sup>. However, in the 1998 nuclear tests, the perceived threats from both China and Pakistan were not real as relations with both were improving.

Considering the domestic politics approach which argues that the reason for building nuclear weapons is due to bureaucratic pressure or strong individual leadership could not give a holistic explanation [2, 8]. The constructivist approach which is also called norms model, argues that technological symbolism (prestige) and organizational culture were the important variables in understanding India's nuclear weapons

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<sup>1</sup> China's nuclear tests were considered to be a threat to India by many scholars and also to the leadership, thus the Peaceful Nuclear Explosion (PNE) program though initially was rejected by Shastri was approved in 1964 [3].

program [8], which the study does not consider to be a complete explanation.

India initially was a pride and crucial proponent of nuclear disarmament which was ideational and was completely supported by the then prime minister Jawaharlal Nehru. The basic ground to the kind of decision-making was morality and world peace. In other words, the foreign policy decision-making of Nehru was idealistic in nature. However, the 1974 detonation of the nuclear bomb which triggered the formation of Nuclear Suppliers Group (NSG), which was also called a 'Peaceful Nuclear Explosion' (PNE), continued the legacy of Indian idealistic foreign policy.

The post-colonial modernity approach which was not that popular in the literature of the nuclear weapons is as important as the other approaches. The main argument of this model is that the identity of the country within the country and on the global space motivated India's sudden decision of dissolving the ambiguity. This, led to the ambitious nuclear weapon program in 1998 by detonating two nuclear bombs at Pokhran under the leadership of prime minister Atal Bihari Vajpayee [3].

Analysis of the existing literature demands further investigation into the real and exact motive behind India's nuclear weapons program. For this, the study considered a mixture of three models- historical-specific (India's nuclear weapons history), multivariate (the causal factors) and theory-oriented (the four theories mentioned above), without which the task would be incomplete. Each model separately may not explain India's nuclear weapons program. These models were particularly explained by Peter A. Hall (2008) in his article saying that, for any systematic investigation either of these models is necessary. However, India's case is an exception and it needs a fine collaboration with all the three models.

## **2. EXPLORING THE HISTORY OF INDIA'S NUCLEAR WEAPONS PROGRAM (HISTORICALLY-SPECIFIC MODEL)**

The decision towards both the 1974 and 1998 nuclear tests was neither pre-planned nor spontaneous. It was a blend of many causal factors and perspectives. It ideally started as a 'soft technology' which was considered to be useful for the better living of Indian people in terms of cheap and carbonless technology. However, it was transformed into 'hard technology' which was destructive.

The Atomic Energy Commission (AEC) was founded in August 1948, but before this a Scientific Advisory Committee was also formed by Homi Bhabha along with the other two. Due to the autonomous role played by Bhabha in the Department of Atomic Energy (DAE) in 1954, the role of individual leadership played a crucial role in the evolving nuclear policies. The task before India at that time was to overcome the issue of dual purpose (use of reactors both for civilian and military purposes) of reactors, as it created a sense

of fear among other nations to share their technology with other nations. So there has always been a friction with the United States (U.S.) and the United Kingdom (U.K.). Nehru though an idealist was very strong in overcoming U.S. pressures. His quest for an independent nuclear program was indispensable. Thus, he constructed a strong trading relationship with the Soviet Union, especially in trading aspects of fissile materials (high-grade Plutonium, Thorium, which are used in explosive purposes).

The nuclear tests on October 16, 1964 and victory of China in India-China war in 1962 prostrated India. Death of Nehru added to this and left India in a very confusing state. Lal Bahadur Shastri was replaced as prime minister and was not aware of the plans framed for a nuclear program. The U.S. backing China's nuclear tests, the cold war power politics, the initial wrong calculations made by Homi Bhabha regarding the expenditure to make a nuclear reactor, food crisis in India, lack of sufficient fissile material (especially after knowing the rapidly increasing missile and uranium bomb technology of China), pressure of opposition party to produce our own deterrent, led Shastri to think about the 'Peaceful Nuclear Explosive' PNE program. Homi Bhabha who had twenty years experience was not in the favor of a nuclear bomb, he did not believe in any distinction of having a peaceful or military use of nuclear energy. However, Shastri overcame all the pressures, increased the budget allocations to 5%, preserved the nuclear diplomacy with Canada and U.S and rejected the idea of PNE program and concentrated on robust development in the area of Science and Technology. [7]

In the later stages, the quest started for security guarantees from U.S. and the Soviet Union. Shastri was quite sure in his no bomb policy, as he says a strong economic development is needed before possessing a nuclear bomb. In the later stages, Homi Bhabha secretly sought for technical help from U.S. to develop the PNE program. As the Nuclear Non-Proliferation Treaty (NPT) regime took its shape under the predominance of the U.S., rejected to provide assistance. IAEA (International Atomic Energy Agency) and its safeguards played a very important role in the identification of factors that would reduce India's incentives to seek a bomb. However, in this process helped India in understanding the loopholes of NPT and thus abstaining from NPT in 1968. [7]

The indigenous nuclear program was hindered as negotiations failed with U.S. and India neither got a nuclear umbrella nor a coherent nuclear policy to counter and limit the Chinese threat (as perceived by the leadership). At this critical situation, Shastri redefined the nuclear strategy and allowed the PNE program. Thus the focus shifted from atomic energy outputs to national security. This argument was made by Perkovich (2002), as Shastri gave more importance to Chinese threat. In this light of events, the war with Pakistan in 1965 intensified the nuclear debate. Thus there was a major policy shift.

The most important event in this period was the transition of leadership in 1966, Shastri and Bhabha died and the places were taken over by Indira Gandhi and Vikram Sarabhai. Gandhi was ignorant about the nuclear policy and moreover, she inherited India with a great deal of economic and foreign policy crisis. Sarabhai diverted the funds of atomic energy research program to Space research program. At the same time, the flow of nuclear technology slowed down at a larger pace due to NPT. Thus, the domestic constraints as well as the international pressure started affecting India's nuclear policy. However, the resistance towards international pressures was clearly seen. [7]

The nuclear policy framework was nowhere a strategy for Gandhi to win the 1967 general elections. Chinese threat was not even mentioned in her manifesto and still, she won the election. On the other hand, her opponent mentioned these issues as a part of political agenda. So it was evident that people did not consider nuclear issues as necessary and important as that of economic development. Only after the elections she concentrated on nuclear issues and took advantage of the nuclear technology in the later stages.

The game of NPT which was being played by the U.S. and the Soviet Union (cold war politics) became very crucial to India in deciding its nuclear and foreign policy. Being a postcolonial state with a non-aligned identity, India did not want to depend on any great powers in borrowing technology. India was in need of some assistance in developing its own technology and research programs. On the same line, India did not want to enter into NPT regime, as India perceived NPT as a question of its sovereignty in its development process. [7]

India further collaborated with the Soviet Union, as U.S. and Pakistan were assisting each other in the Afghanistan crisis. The shifts that underwent in the making of India's nuclear policies reflected many conflicting domestic as well as international pressures and interests. The ambitions and the personal outlook of many leaders influenced especially in deciding nuclear weapons policy. Two scientists, Bhabha and Sarabhai and two prime ministers, Shastri and Indira Gandhi, played the lead role. However, their preferences were majorly attached to the Congress party politics. Of course, Bhabha did not consider nuclear weapons as military instruments. For him, the value of the nuclear explosive capability was political and psychological. According to him, India entering into the list of nuclear weapon states was a symbol of modernity and prestige and not for the military requirements. But Sarabhai thought in a different manner saying that, India entering into the nuclear weapons club may not do any material good to India. He mentioned some practical problems that India would face such as military repercussions. Also mentioned about the significant security gains it could achieve by building nuclear weapons and thus India should consider nuclear weapons option. The conflicting positions of Bhabha and Sarabhai led to a major debate on possessing nuclear weapons. The

decisions were left to prime ministers whether to embrace or reject nuclear weapons option.

The decision of the PNE program though taken by Gandhi with the advice of Ramanna, she was totally unaware of repercussions of the explosion. Initially, she did not consult any other associated departments and institutions or gave sufficient prior information about the detonation of the bomb. [7] She was supposed to know the analysis of costs and benefits of the detonation, (international security consequences, what would be the responses of the other states, regarding other treaties which could be affected, military implications and so on). It was just a domestic and scientific push.

The implications were serious, India lost the cooperation of Canada and the members of the NPT regime strongly advised World Bank not to entertain any nuclear-weaponizing countries. Lack of strategy and coherence in the nuclear policy led to the negative fallout of Gandhi's popularity. The secretive policy was a big failure as it failed to engage other knowledgeable and relevant institutions to formulate a consolidated Indian nuclear policy. Death of Indira Gandhi led to the regime of Rajiv Gandhi, who was initially not in the support of further nuclear weaponization. He mainly concentrated on achieving better ties with the United States to improve technological base while maintaining relations with the Soviet Union. However, the rapid weaponization of Pakistan mounted pressure on Rajiv Gandhi. Under the secretary of defense for policy of the U.S., Mr. Fred Ikle talks with Defense Research and Development Organization (DRDO-India) led to an agreement on Light Combat Aircraft which helped in building up the defense cooperation between U.S. and India. At this point of time, U.S. stopped pressurizing Pakistan on its nuclear weaponization program and the same time it gave support to India in developing technology indigenously. Thus India's nuclear capability started improving. However, there was no strategy ahead. So to fill this gap and to meet the defense and nuclear energy planning needs, Rajiv Gandhi formed a secret committee with members of AEC, DRDO and other relevant institutions. This led to the emergence of a minimal deterrence policy with strict no first use policy and massive retaliation policy in case of any nuclear attack against India. [7]

Self-sufficiency and technology were given more importance than exhibiting power through nuclear explosives. There was a sharp fall in the U.S. intervention in South Asia especially in the affairs of India and Pakistan. At the same time, slow improvement in the Sino-Indian relations took place. The dynamic personality of Rajiv Gandhi and his interest in the disarmament policy also played a crucial role in achieving this improvement in the foreign affairs. However, the nuclear threat from Pakistan was contemplated and the talks between the two countries were not settled because of the border issues. [7]

In 1998 Pokhran II tests self-interest of the leadership played a prominent role. The BJP government came into power on 19 March 1998 and the tests were conducted on 11 May 1998. The decision was sudden and immediate, without the involvement of any relevant institutions, especially without seeking military opinion. Tests were secretly planned and the leadership eventually declared India as a nuclear weapon state. Thus, the lack of democratic decision-making was evident. India has a minimal deterrent policy and a no first use policy to deter Pakistan and China especially (this was the claim of the government). Considering Pakistan, it did not test any nuclear device and India gave a chance for it to do so, resulting in the Chagai I on 28 May 1998. In the case of China, even after the Pokhran II, with a low yielded bomb India was not in a position to deter China, [2, 9] (conventionally and even in a nuclear war because India clearly did not have a second-strike capability and thus ultimately resulted in arms race). Some authors explained that the decision was made just to prove India's indigenous technological prowess and as a major power in South Asia. This was majorly driven by domestic politics, symbolism, postcolonial identity and also claimed that the security aspects were secondary [2, 3, 7]. On the same line, India perceived NPT, CTBT (Comprehensive Test Ban Treaty) and FMCT (Fissile Material Cut-Off Treaty) as not legitimate measures for complete nuclear disarmament but as tools for mere legitimizing the five nuclear weapons states.

### 3. EXPLAINING INDIA'S NUCLEAR WEAPONS PROGRAM (THEORY-ORIENTED MODEL)

#### 3.1 Ideational Approach

Jawaharlal Nehru's 'scientific temper' prompted him to develop nuclear technology for providing the humanity a clean source of power. His approach towards the nuclear technology was clearly idealistic in nature. Under the leadership of Jawaharlal Nehru and Homi Bhabha, India with an idealistic foreign policy started possessing nuclear power technology, especially to improve its economy (as nuclear energy is the cost-effective procedure to produce electricity). Thus it was considered a key element for economic development.

As already explained, though India abstained from NPT and pursued the PNE program, the use of word 'peaceful' by Shastri and Gandhi retained the ideational approach of India's foreign policy. The same was retained by Rajiv Gandhi as he opposed rapid weaponization and did not embrace defense modernization to a certain point of time. He introduced Action Plan in the special session on disarmament in the UN General assembly, which was a three-stage plan to achieve nuclear zero. He was the first to visit China after Nehru to improve the relations and to normalize the conditions and thus reaffirmed the conditions for peaceful coexistence in December 1988. However, Rajiv Gandhi's principle of peaceful coexistence did not work with Pakistan as it was backed by China in

producing its missile technology and thus the missile race was rapid.[7]

Though India established itself as a nuclear weapons country, the complete nuclear disarmament is always an ambition for India. The ethical and moral conduct of India was never compromised and thus India could get a Nuclear Suppliers Group's waiver (which needed the membership of the NPT). Now, India has healthy nuclear trade with fourteen countries including Japan.

#### 3.2 Domestic Politics Approach

As explained by Andrew B. Kennedy (2011), the India's Weapons program was not motivated by the growing China's nuclear capabilities. Coming into the facts, China's first nuclear test was conducted in 1964 which has the yield of about 22 kilotons and while India conducted its first test a decade later in 1974 in which the yield was less than 15 kilotons (which is still controversial). Here there are two things to analyze, one is the decade gap that India took and the other is India's nuclear bomb's yield did not match with the yield of China's. If China was the major reason, India could have been competitive enough to defend the China's nuclear bomb (technically India did not achieve the second strike capability<sup>2</sup>). So, the security model could not be appropriate to understand the puzzle, as the purpose of security itself was not achieved.

In 1974, when Indira Gandhi took the prime ministerial position, she was clueless about the strategic plans of Jawaharlal Nehru and Lal Bahadur Shastri, she was left completely under bureaucratic pressure to take such a decision. However, the Atomic Energy Commission (AEC) announced that the Peaceful Nuclear Explosion (PNE) program was to enhance the technological development of the country and it was clear that India's foreign policy was opposed to the military use of the nuclear technology [3].

After the assassination of Rajiv Gandhi, P.V.Narasimha Rao was appointed as PM who appointed Manmohan Singh as Finance Minister which led to the liberalization of India. This ended India's non-alignment policy. This changed the direction of Indian foreign policy (total transition to a realpolitik foreign policy) and nuclear policy has got its new shape. BARC (Bhabha Atomic Research Centre) and DRDO reinforced to continue its research and development at a high-level integration. The Indo-Pak agreement was ratified to not attack each others' nuclear facilities. The effect of economic reforms had a negative impact on the development of the nuclear technology, as direct investment reduced. Private investment halted due to the stringent rules of the NPT regime. Highest priority was given to diplomacy, thus funds raised rapidly to India for its economic development from various

<sup>2</sup> A second strike capability is a country's powerful retaliation in a response to a nuclear attack.

organizations (IMF, World Bank, Asian Development Bank, from Paris, Japan, Germany and the U.K.). Though the stability sustained at LOC (Line of Control- Pakistan), the missile race continued. The intervention of the U.S. by formulating economic sanctions did not help much in putting an end to the arms race. [7]

The coalition politics played a major role since 1996. BJP did not win in 1996 elections, though it was more pro-bomb and also did not want India to sign CTBT. The strategic ambiguity mounted, though Prithvi and Agni missiles gave a boost to Indian defense technology, there was no national security strategy [6, 7]. Abdul Kalam public speech advising not to bound to the pressure of the U.S. on the new government formed by Janata Dal (United Front) should have helped the government to not sign the CTBT [7]. The main intention of India was to improve its own research and development in Science and technology. The development of economy added to it. So the nuclear option was open and was not clear, leading to the ambiguous development of missile and nuclear technology. Meanwhile, there is a steady development of relations with China, especially enhancing confidence building along the 'line of actual control' (LOAC). So the nuclear policy was a mixture of strategic ambiguity at its core and diplomacy at its periphery.

There were many domestic political reasons as explained by Kanti Bajpai (2009). The formation of government by Bharatiya Janata Party (BJP) by crushing the long legacy of the Congress rule in 1998 gave it a chance to establish India as nuclear power. It was also argued that establishing India as a nuclear power was a part of the political agenda of the BJP in 1998.

However, these arguments could not explain why India remained a de facto nuclear power, did not sign the Nuclear Non-Proliferation Treaty in 1995 during the review and extension conference. The most important point here to note is that India did not even attend as an observer state (which was opened for the first time to the non-partied countries). Moreover, Pakistan which India claimed one of the major reasons for the 1998 nuclear test officially attended the NPT Review and Extension Conference (1995 NPTREC).

It is clear that the leadership knew about the Nuclear Weapons Program and it was not a sudden technological development by the Atal Bihari Vajpayee who took the charge on 19<sup>th</sup> March 1998 and the nuclear test was done on 11<sup>th</sup> May 1998. It was also argued that the economic constraints which were present before 1990 disappeared after the liberalization.

However, what made the previous governments to not test the nuclear bomb and what made the BJP government within two months of coming into power to consolidate such a sudden and uninformed decision? These questions could not be answered by the domestic politics approach.

### 3.3 Constructivist Approach

According to this approach, the nuclear weapons acquisition was related to state identity. As Scott Sagan (1996-1997) explains that the decision behind the nuclear weapons acquisition was not merely relied upon the leadership, ideology or bureaucratic interests, it is beyond that. It was depended on 'more deeper norms and shared beliefs about what actions are legitimate and appropriate in international relations' [8].

'Nuclear symbolism' was another alternative perspective which played a major role in India's nuclear weapons program. It could be said that for being a modern state, acquiring nuclear weapons was felt important by the leadership as well as to the bureaucrats.

In a sociological perspective, it could be said that the decisions of the leadership were motivated by the individual perceptions on modern behavior and the prestige of the country on the international stage. Yet, this is related to the domestic politics in a way that the perceptions of the individual leadership would define his/her political career and in the creation of the public opinion.

Does this argument really support India's nuclear program? No, because, if concerning norms was important to the leadership, then it would be more valuable to achieve other viable development programs like eradicating poverty, unemployment, contagious diseases. India did not sign the NPT in the NPTREC though there was a clear tabooing of nuclear weapons which ultimately transformed into an international norm to ban nuclear weapons. At this point of time despite having international pressure, India chose to quit NPT and develop its own nuclear weapons.

### 3.4 Post-Colonial Modernity Approach

In the time of masculinity being constructed as a cornerstone of modernity, the literature on nuclear weapons and the way the nuclear technology was portrayed was also of masculine in nature.

As Homi Bhabha has suggested, however, the effeminate Indian 'mimic man' was a troop that was deeply unsettling to the colonial imagination in its ability to transgress gender roles and, in its 'capacity for imitating', to threaten the boundary between colonizer and colonized. As we shall see, it was this element of threat that some Indian nationalists tried to exploit in their engagement with the trope of effeminacy.[3]

The politics of colonial masculinity were entrenched in the nuclear weapons program. The Gandhian movements which were built to disrupt the colonial authoritative rule also stood against the 'hyper-masculine' worldview of colonialism. However, the ideals of Gandhiji were not subjected to practice especially in the rubric of India's nuclear weapons program.

Bhabha, never considered nuclear weapons as military instruments. For him, the value of the nuclear explosive capability was political and psychological, both in the personal

and in the national sense. According to him, India entering into the list of nuclear weapon states was a symbol of modernity and not for the military requirements.

Itty Abraham (1998), in his book, elaborated that the 1998 nuclear tests made India more insecure than ever before. According to him, it was to establish the legitimacy of the independent nation-state which was a product of post-colonial identity.

#### 4. EVALUATING INDIA'S NUCLEAR WEAPONS PROGRAM (MULTIVARIATE MODEL)

In India's foreign policy discourse, global nuclear disarmament was always been explicit and even now the trend is evident by showcasing the ethical and moral values that are inherent in India's civilizational heritage and culture [3]. After analyzing the four theoretical approaches, it is evident that the causal factors which led to India's nuclear weapons program did not just depend on security issues, domestic constraints, symbolism, morality, postcolonial identity, it also depended on the time and the level of technological prowess.

The aim of the study is not to deny any of these theories and models. Here, the argument is that no single factor adequately explains India's nuclear weapons program. The causality model for Indian case is different altogether. It depended on the various factors (both causal and correlational). Jawaharlal Nehru who was a genuine supporter of nuclear disarmament proposed strong international norms while having a long-term vision for India's indigenous nuclear energy program. It was ideational in approach as his government was a socialist, which was a correlational factor as it denied investing in nuclear weapons production. Yet, Shastri and Indira Gandhi did agree to the PNE and eventually named it as 'Smiling Budha' and which also seemed to be ideational in approach. It was evident that during the tenures of Rajiv Gandhi and PV. Narasimha Rao, indigenous technological prowess was given more importance. In the case of Atal Bihari Vajpayee, showcasing that technological prowess in terms of postcolonial identity seemed to be important.

#### 5. CONCLUSION

The study would conclude that the perspective of achieving security was implicit. The other domestic political, ideational,

constructivist and postcolonial identity factors were explicit in terms of economy, individual leadership, morality, symbolism, nation-state identity respectively. In turn, these factors depended on various other correlational circumstances and time frame.

#### REFERENCES

- [1] Abraham, Itty (1998), *The Making of the Indian Atomic Bomb: Science, Secrecy and Postcolonial State*, Chicago: The University of Chicago Press.
- [2] Bajpai, Kanti (2009), "The BJP and the Bomb," In Scott D. Sagan(eds) *Inside Nuclear South Asia*, Stanford: Stanford University Press.
- [3] Chacko, Priya (2011), "The Search for a Scientific Temper: Nuclear Technology and the Ambivalence of India's Postcolonial Modernity," *Review of International Studies*, 37, 185–208.
- [4] Hall, Peter P (2008), "Systematic Process Analysis: When and How to Use it", *European Political Science: Basingstoke*, 304-317.
- [5] Kennedy, Andrew. B, (2011) "India's Nuclear Odyssey: Implicit Umbrellas, Diplomatic Disappointments, and the Bomb," *International Security*, 35 (2): 120-153.
- [6] Mattoo, Amithabh (1996), "India's Nuclear Status Quo." *Survival*, 38(3): 41-57.
- [7] Perkovich, George (2002), *India's Nuclear Bomb: The Impact on Global Proliferation*, London: University of California Press.
- [8] Sagan, Scott D (1996-1997) "Why Do States Build Nuclear Weapons?: Three Models in Search of a Bomb." *International Security*, 21( 3): 54-86.
- [9] Santhanam, K, Ashok Parthasarathi (2013), K. Santhanam and Ashok Parthasarathi: Pokhran II: A H-Bomb Disaster, Hindustan Times, January 21, 2013.
- [10] Tellis, Ashley J (2001), *India's Emerging Nuclear Posture: Between Recessed Deterrent and Ready Arsenal*, Project Air Force: RAND.
- [11] Waltz, Kenneth. N (1979), *Theories of International Politics*, Philippines: Addison-Wesley Publishing Company.
- [12] Zakaria, Fareed (1992), "Realism and Domestic Politics: A Review Essay." *International Security*, 177-198.