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## Assessing India's Defence Self-Reliance through the Lens of Keohane and Nye's Complex Interdependence Theory

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### ABSTRACT

The self-sufficiency in defence acquisition by India has become of special strategic relevance in the fast changing global security landscape that has been typified by technological interdependence, regional power disequilibrium and geopolitical insecurities. This paper will discuss the defence self-reliance of India in terms of the theoretical approaches of Complex Interdependence Theory by Keohane, and Nye which highlights the multi-level interaction of the states, lack of a precedence hierarchy of issues and the lowered status of military force in the inter-states interplay. Using the study of the defence policies of India, the technological advancements that occurred in India and their strategic responses, this research paper shows how India is balancing global interdependencies to accomplish the strategic autonomy whilst concurrently entering into selective international collaboration. Issues of foreign dependencies in critical defence technologies, the tradeoff between domestic innovation and international alliances, and the consequences of global supply chains facing the defence modernization of India are also discussed in the paper. Using a qualitative research methodology, the research incorporates policy analysis, case studies of

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major indigenous defence projects, and comparative experience of international self-reliance projects.

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## **Research Methodology**

This paper uses a qualitative research design to analyse the self-reliance of defence by India using the Complex Interdependence Theory by Keohane and Nye. Primary sources that include data regarding the Ministry of Defence reports, policy documents, and official statements are used to collect data, as well as secondary sources including scholarly articles, books and media reports. A case study methodology is used to examine the importance of some of the indigenous defence projects such as Tejas, Arjun and BrahMos to evaluate the technological development, international cooperation and strategic self-sufficiency. The analytical model dwells on various points of contact, the interdependence of the issues, and the weak use of military force. Things that could restrict it are the use of open-source data and the changing geopolitical environment.

## **Introduction**

The quest of India to achieve self reliance in defence arena has taken the centre stage in the Indian national security strategy in the 21 st century. The global defence ecosystem in question is certainly not an isolated entity: it is much embedded in a net of global supply chains, technological partnerships, economical dependencies, and diplomatic connections. This fact is in keeping with what is categorized by Keohane and Nye as complex interdependence. They explain in *Power and Interdependence: World Politics in Transition* that in a world of complicated interdependence societies are linked through a number of channels these channels include not only interstate diplomacy, but also transgovernmental networks among non state actors like multinational corporations and NGOs and informal connections. Furthermore, they underline the fact that there is one lack of order between issues, i.e. security as a classic privilege of the realist theory does not necessarily take the forefront in the foreign policy agenda of a state; economic, technological, environmental and social issues can also gain similar significance. Lastly, in their ideal type model, military force plays a minor role: coercion is less efficient when states and societies are highly interdependent and non military forms of influence, including economic, institutional, informational ones, are more influential. The application of this theoretical framework to the defence sector in India is the more fruitful as it brings us to a deeper comprehension of India as a country that aims to be self reliant not as a country that aspires to being isolated and autarkic but as a country that is redefining its strategic balance in a very interdependent global system. Indigenous defence projects,



technology transfers, joint ventures, and selective foreign partnerships indicate how India finds its way through all those channels - making a strategic decision to remain autonomous without cutting the many ties that come with global defence production. Placing the modernization of India defence in the conceptual framework of complex interdependence, this paper aims to measure the effectiveness with which India is doing its self reliance and yet at the same time is integrated in the global interdependencies. This will not only enhance our hypothetical understanding of the defence strategy of India, but it will also play a role in the wider discourse of international relations regarding the changing concept of power, sovereignty and autonomy in the globalised world

## **2. Theoretical Framework: Complex Interdependence Theory.**

The research paper on defence self-reliance of India has been based on the Complex Interdependence Theory by Keohane and Nye, giving a close insight on the relation between international relations as opposed to the usual realist perspective on international relations that revolve around military strength. Keohane and Nye (1977) argue that in the world politicking there exist various channels linking societies such as interstate, transgovernmental and transnational linkages ([olivialau.org](http://olivialau.org)). This concept reminds us that states do not relate to each other with the help of formal diplomatic relations only, but with the help of the agencies of governments, non-governmental organizations and non-governmental organizations, informal networks. These various channels in the case of India defence industry can be understood as technology transfers, joint ventures, multinational partnerships, and involvement of the private industry in the defence innovation. The lack of a hierarchy of issues is another principle of the theory. Keohane and Nye add that military security is not always on the agenda and in most cases, the foreign policy in the modern world is based on economic, technological, environmental, and social factors ([e-education.psu.edu](http://e-education.psu.edu)). This observation is quite applicable in the case of India where defence modernization needs to be conducted on all fronts that takes into consideration technological capability, industrial capacity, strategic autonomy as well as international obligation. The self reliance of India does not merely focus on the ability to create weapons but it involves the economic sustainability, the ecosystem of innovation and a global partnership in the defence planning. Lastly, in situations where there is a complicated interdependence, the military force is a but a small part in strategic goals realization. The non-military resources like technological progress, international relations, commerce and institutional collaboration become eminent. The examples of India indigenous defence projects, including Tejas LCA, Arjun MBT and BrahMos missile system are the indication of such dynamic: As much as the national security is empowered by the projects, they are also integrated into discriminatory international relations: knowledge and capabilities are created without jeopardizing the strategic autonomy.



With the use of the Complex Interdependence Theory, the paper analyzes India on the way it manages global interdependencies between domestic innovation and foreign cooperation. The theoretical framework emphasizes the fact that self-reliance in the contemporary defence environment is not about being isolated, but the capacity to plan the links tactfully, maximize autonomy and utilize a variety of exertion avenues to achieve national security goals.

### **3. Defence Self Reliance Conceptual and Historical Context of India.**

The historical necessities, geopolitical compulsions, and vision have all worked together in shaping India into a self-reliant nation in the defence industry. During the immediate period right after the independence, India was severely constrained in the production of indigenous defence equipment and had a great dependence on the foreign sources of supply of military equipment and technological knowhow. The early independence era and Sino-Indian war of 1947-1962 were an eye opener on the essential weaknesses related to this dependency as India found it difficult to arm and modernize its military in response to the threats of the region. The war of 1962, especially, revealed the deficiencies of dependence on the foreign armament and the necessity to create the domestic defence forces.

India responded by making major institutional, policy efforts to decrease dependence on the outside world. The formation of Defence Research and Development Organisation (DRDO) in 1958 was a historic move towards the development of domestic technological competence. The DRDO was charged with the responsibility of designing, developing, and manufacturing superior defence systems within India, be it missile or tank, radar systems or fighter. To supplement this, the establishment of ordnance factories and government-owned defence production units in India allowed the manufacture of conventional weapons and ammunition, which was the basis of the domestic defence production. Even with these, the technological and resource limitations limited the extent and an advanced level of indigenous production, and India depended on select foreign technologies as the high-end platforms.

An additional policy development took place in the late 20<sup>th</sup> century, especially after the 1991 economic liberalization that promoted increased interaction with the world and foreign technological collaborators. Modernization was also associated with more and more defence collaboration with foreign companies in the advanced platform, engines and electronic equipment, and at the same time, the local manufacturing through licensing and technology transfer agreements. The 2000s generation of the indigenization programs through the series of successive Defence Production Policies were aimed at strengthening the local supply chains, promoting the entry of the private sector and developing an innovation ecosystem that must be capable of sustaining the high-technology defence projects. Other initiatives like Make in



India (since 2014) only served to strengthen this vision as it revolved around indigenous design, development and production of a wide range of defence platforms.

In the past, India has been enjoying a delicate balance between being self-reliant and interdependent. Although the strategic goal has been still the building of domestic capabilities, India has acknowledged that it cannot be isolated entirely and that is not desirable in a world that has been technologically integrated. Selectivity in international cooperation facilitated knowledge gain, research and development in essential systems and this is in line with the principles of the Complex Interdependence Theory. Examples of such dual approach include the indigenous development of the Tejas Light Combat Aircraft (LCA), Arjun Main Battle Tank (MBT) and BrahMos missile system which all involve domestic experience but with specific foreign assistance to enhance self-reliance without impairing strategic autonomy.

In addition, policy tools, e.g. offsetting foreign defence procurement, investment in research organisations, incentives to engage in the work of the private sector have established a self-sufficient ecosystem that can achieve sustainable technological development. The history of India indicates that the concept of self-reliance in defence is not only the manufacturing of weapons but also includes the development of a strong innovation and industrial foundation, integration with the technological processes in the world, and the capability to take strategic advantages out of interdependence. It is this long-term development that underscores that defence self-reliance in India is a technological and strategic project to gain independence on most important capabilities without being caught up in the limitations and opportunities of an intricate, interwoven global defence environment.

#### **4. Theoretical Perspective on Policy and Institutional Efforts towards Defence Self-Reliance.**

The state of India and its quest into defence self-reliance is not just indicative of its internal interests but also of the situation of the ever-globalized security and technological landscape. The Complex Interdependence Theory by Keohane and Nye can be discussed as a useful perspective to interpret this process and point out three main characteristics, i. e. many channels of interaction, lack of hierarchy of issues, and the inappropriateness of military force in fulfilling state purposes. All these features are evident in the defence strategy of India. Policies, institutions, and strategic initiatives are various avenues of knowledge sharing, development of technologies, industrialization as well as selective international cooperation, and this has seen to it that India is not excluded in the global technological flows and still has the autonomy over such essential capabilities.



India has been trying to make itself self-reliant through its policy frameworks. The Defence Production Policy which is updated periodically focuses on local production of weapons and equipment, development of local research infrastructure and promotion of industry involvement in the process. In 2014 these targets were increased further in the Make in India initiative that offered incentives, simplified the procurement procedure and industrial-academic collaboration to enhance the local defence environment. The foreign procurement contracts are also under the same obligation to offset, which is to make sure that international cooperation leads to national capability-building, to transfer foreign investment and technology expertise to local institutions. All these policies reflect the concept of the theory of strategic management of interdependence: India turns to the rest of the world selectively to obtain the technology and expertise, but without losing the control over the most significant defence sectors.

Institutions are important in the operations of these policies. The Defence Research and Development Organisation (DRDO) manages research in several areas, ranging between missiles and fighter aircraft to naval systems and electronic warfare and has built an ecosystem that can support innovation. Ordnance factories and units of the public sector help in mass production and technology absorption, whereas greater involvement of the private industry guarantees competitiveness and diversification. These institutional structures are indicative of multiple channel principle in the theory where domestic research, industrial produces and selective international inputs are combined to produce strategic results. Transgovernmental and transnational connections can be seen in the collaboration of Indian institutions with foreign defence companies, research institutes and technology partners that can help in knowledge transfer without losing the operational control.

Another major principle of interdependence complexly, the lack of hierarchy of issues is also reflected in the Indian defence strategy. Decision making in defence self reliance combats in a unison technological capability, industrial capacity, economic feasibility, autonomous approach to strategies as well as geopolitical aspects. In the example of, during the development of some advanced missile systems or fighter jet, India finds a balance between the local research capacity, acquisition of foreign technology, labour skill training, and the budgets. This multi-dimensional approach provides that no particular factor including that of military capability gets the agenda as such that makes it close to the theoretical framework suggested by Keohane and Nye.



Strategically, the attempts of India put alignment on the small role of the military force in the development of technological self-reliance. Military requirements are determined by military needs but the methods to attain self reliance are through technology and innovation, policy instruments and International cooperation as opposed to direct force. The selective interaction with the world community, the support of the national research, and the development of domestic supply chains reveals that soft power, knowledge, and institutional alignment may create the strategic independence, even in the industry where military considerations were traditionally the primary force.

To sum up, the self-reliance strategy of India in defence constitutes a good example of the real implementation of Complex Interdependence Theory. Such policies as Make in India and offset obligations, such institutions as DRDO, and the overall strategy all combine to establish a system where India becomes a stronger domestic power while still balancing its interdependence with the overall global defence ecosystem. Instead of isolating itself, India cautiously exploits varied avenues of interaction and balances competing issues and focuses on technological and institutional innovation to increase autonomy as much as possible. This multidimensional strategy makes sure that India is on the right path of becoming sustainable, resilient and strategically coherent in terms of self reliance in defence that how the theoretical tenets of interdependence can be translated into effective national strategy.

## **5. Discussion and Analysis**

The strategic direction of defence self-reliance in India is a multi-dimensional and complicated approach involving household innovation, institutional capability, and selective internationalisation. Using the Complex Interdependence Theory, which is created by Keohane and Nye, it is obvious that India does not make the effort of isolationism, but it follows several streams of relations, it is a moderate attitude to conflicting interests, and the focus on non-military tools to reach the strategic goals. This discussion evaluates the Indian operationalization of these principles in practice, the assessment of success, areas of challenge, and implications of the same to the long-term strategic autonomy.

The concept of a multi channel of interaction is seen in how India integrates research institutions within the country, the industry and foreign cooperation. Domestic sources of innovation, production, and capability building are also represented by institutions like the DRDO, ordnance factories and the private defence companies. Simultaneously, foreign alliances provide India with the opportunity to obtain modern technologies, get to know world best practices, and introduce knowledge transfer systems. As an example, technology collaboration agreements, joint ventures, and licensing deals with international defence companies can be used as an example of how India uses interdependence to improve domestic



competencies without losing control over the important systems. This method proves the usefulness of the complex interdependence: it is not the foreign connections that can be avoided and help to be more strategic, it is that the foreign ties should be carefully managed and used in favor.

There is also the lack of prioritization of problems which defines the strategy of India. Defence self-reliance decisions are made in which technological preparedness, industrial capability, economic limitations, geopolitical factors, and development of the workforce are not only considered at the same time. As an example, policy, industrial planning, research prioritization are incorporated into such initiatives as Make in India, which is a multi-issue approach that does not provide a single factor as the decisive one. Likewise the administration of the offsets in the foreign procurement contracts equalizes the purchase of foreign technology and local industrial development with the aim of showing the alignment of competing priorities organized in the long term in order to achieve maximum independence.

The position of military force in reaching the self-reliance in terms of technology is also very limited in the strategy of India. Although military needs influence the development and construction of platforms, the development of self-sufficiency is mainly based on research and development, industrial coordination, and strategic alliances. India can achieve this through strategic autonomy, which does not have to be based on military coercion only, as policy instruments and institutional capacity are vital elements in achieving strategic autonomy. This is in line with the theoretical understanding that in a world of intricate interdependence, non-military instruments of statecraft may assume a decisive part in accomplishing a nation goal.

India is still grappling with challenges, in spite of its improvement. The most important parts of it, e.g., sophisticated engines, electronics, and materials, are still partially reliant to foreign sources, and they do not provide full independence. There are also risks of supply chain vulnerability, budget limitations and fast changing global technological environments. India, however, has also shown a pragmatic strategy, despite being a nation with selective globalization, through its incremental approach which consists in developing domestic capability and continuing to be integrated into international networks: the state becomes stronger in its autonomy and at the same time it is integrated into international networks through the theory of complex interdependence.

To sum it up, the discussion shows that the process of Indian defence self-reliance is not only a technical or industrial advancement but also a strategic interdependence management. Through use of various channels, coordination of competing issues and focus on innovation and institutional capacity, India demonstrates how a state may attain significant autonomy in an incredibly interconnected global



environment. The policies and institutional mechanisms of the country have a subtle perception that self-sufficiency can best be attained not by lone rangerism, but through smart interaction with the global partners that domestic competence, strategic command and technological development take the route of a coordinated and sustainable development.

## **6. Conclusion and Policy Recommendations.**

The Indian quest of becoming self-reliant in its defence is a historical endeavor to become independent in essential defence facilities without the need to be absorbed in a globally intertwined defence network. The implementation of the Complex Interdependence Theory offered by Keohane and Nye can be used as a useful instrument to explain this multidimensional process, the importance of various channels of interaction, the lack of the hierarchy between issues, and a limited role of military force as the only means of influence. The Indian strategy is a perfect example of such principles by the balancing of domestic innovation, institutional development, and the selective international cooperation in order to increase the strategic autonomy. The discussion shows that India has gone a long way in establishing a strong defence industrial response, research and development as well as enhancing policy and institutional responses. Programs like Make in India, Defence Production Policies and offset requirement during foreign procurement contracts have provided a conducive leadership to local technological innovation and industrial development. The institutions such as the DRDO, the ordnance factories, the enterprises of the private sector are the means of knowledge creation, technology assimilation, and production capacity and can be seen as the factor of the multiple channels of influence as suggested in the theory. Moreover, the example of India and its strategic involvement into the cooperation with other countries shows that the selective interdependence can increase the national capacities without losing the control over the operations in accordance with the theoretical principle of complex interdependencies dealing in the national interests.

However, challenges remain. Even critical parts, especially in high-technology areas like advanced engines, avionics, and electronic warfare systems are of foreign supplies. Other challenges include budgetary limits, lack of internal technological skills and a high rate of global security dynamics. To overcome these situations, India should bolster its innovation system through investments in high-level research, development of human talent as well as increasing involvement of the private sector in high-technology defence productions. Enhancement of supply chain resilience, encouraging global R&D jointly with other partners, and strategic review of technology flows will make additional self-reliance consolidation without weakening the ties of interdependence.



As a policy, India must employ a long term integrative approach that incorporates domestic capacity building with selective international cooperation which is informed by the principles of complex interdependence. The most important recommendations are:

**Increasing the involvement of the defence R&D and production by the private sector and start-ups.**

1. Investing in new technologies, including artificial intelligence, cyber security, missile defence and next-generation platforms.
2. Optimising defence procurement policies to promote technology transfer, indigenization and innovation.
3. Ensuring strategic involvement with its reliable foreign partners in providing essential technology inputs whilst ensuring operational independence.
4. Encouraging inter institutional cooperation between the DRDO and the public and private sector enterprises and academic institutions to maximize research and production.

To sum up, the self-reliance of Indian defense is not only a process of the creation of the local weapons systems but the method of the interdependence management, the improvement of technological and industrial background and the national security insurances in the long run. India is in a pathway of attaining sustainable autonomy through selective global partnerships by aligning policy, institutional capacity and strategic engagement with the principles of the Complex Interdependence Theory. This multi-dimensional approach will help India to manage the problems of an incredibly interconnected global defence environment and at the same time steadily decrease reliance on external sources, ensuring operational preparedness and strategic sovereignty.

**India’s Defence Self-Reliance through Complex Interdependence**

THEORETICAL CORE	STRATEGIC MECHANISMS	POLICY COORDINATION
<p><b>Complex Interdependence Theory (Keohane &amp; Nye)</b></p>	<ul style="list-style-type: none"> <li>• Domestic R&amp;D Institutions</li> <li>• Defence Industry (Public &amp; Private)</li> </ul>	<ul style="list-style-type: none"> <li>• No Single Issue Dominance</li> <li>• Technology, Economy &amp; Geopolitics</li> <li>• Workforce &amp; Industrial Planning</li> </ul>



	<ul style="list-style-type: none"> <li>• <b>International JVs, ToT &amp; Offsets</b></li> </ul>	
<p><b>MODE OF EXECUTION</b></p> <ul style="list-style-type: none"> <li>• <b>Innovation-led Development</b></li> <li>• <b>Institutional Capacity Building</b></li> <li>• <b>Strategic Partnerships</b></li> </ul>	<p><b>STRUCTURAL CHALLENGES</b></p> <ul style="list-style-type: none"> <li>• <b>Critical Tech Dependence</b></li> <li>• <b>Supply Chain Risks</b></li> <li>• <b>Budgetary Constraints</b></li> </ul>	<p><b>STRATEGIC OUTCOME</b></p> <ul style="list-style-type: none"> <li>• <b>Strategic Autonomy</b></li> <li>• <b>Selective Global Integration</b></li> <li>• <b>Sustainable Defence Self-Reliance</b></li> </ul>

**References**

- Keohane, R. O., & Nye, J. S. (1977). *Power and Interdependence: World Politics in Transition*. Little, Brown and Company.
- Narayanan, K. G. (2022). *Endeavours in Self-Reliance: Defence Research (1983–2018)*. DESIDOC.
- “Indigenisation of Defence.” Drishti IAS. (n.d.).
- “India’s Indigenous Defence Production.” Insights on India. (2024, July 8).
- “Self-Reliance in Defence.” IndianCentury. (2025, November 27).
- Ministry of Defence, Government of India. (2025). *Annual Production & Export Data — FY 2023-24*. [Press Release / Report].