Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Vietnam's Arctic Interests and Strategy under De-globalization: A Case Study Based on Complex Interdependence

Liang Cao

709309564@qq.com

Guangxi Polytecnic of Construction

Guangmiao Xu

East China Normal University

Article

Keywords: Arctic strategy, Complex Interdependence Theory, de-globalization, emerging economies

Posted Date: October 22nd, 2026

DOI: https://doi.org/10.21203/rs.3.rs-10676332/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

Vietnam's Arctic Interests and Strategy under De-globalization: A Case Study Based on Complex Interdependence

Liang Cao*

Doctor degree of International Relationship, Lecturer of Guangxi Polytechnic of Construction, the leader of expert consulting team of regional energy politics and energy transition of Guangxi Science Association.

Guangmiao Xu

Doctor degree of International Relationship, Associate Professor of School of Politics and International Relations, East China Normal University.

*Corresponding author: Liang Cao

Email: 709309564@qq.com

Co-author: Guangmiao Xu

Email: gmxu@saias.ecnu.edu.cn

Abstract: Abstract: This study applies Complex Interdependence Theory to analyze Vietnam's Arctic strategy amid de-globalization, tracing its evolution through three stages: early exploration (pre-2000), rapid development (2000-2010), and strategic adjustment (2010-present). Vietnam's engagement is driven by energy security, environmental vulnerabilities, and geopolitical considerations. The research examines how sensitivity, vulnerability, and asymmetry shape Vietnam's strategic choices, revealing that its non-Arctic status creates dependencies in resource access and governance participation. De-globalization has intensified resource competition, compelling Vietnam to adopt pragmatic bilateral and regional approaches combining partnerships, scientific collaborations, and institutional engagement. The study provides policy recommendations for Vietnam, international organizations, and emerging economies, contributing to understanding how non-Arctic states navigate complex geopolitical landscapes in pursuing Arctic interests.

Keywords: Arctic strategy, Complex Interdependence Theory, de-globalization, em erging economies

I. Introduction

The Arctic has emerged as a critical region in global geopolitics and economics due to its vast natural resources, accelerating ice melt, and role in environmental governance. It holds an estimated 13% of the world's undiscovered oil and 30% of its untapped natur al gas, driving competition among Arctic and non-Arctic states as climate change increas es accessibility. [1] The region's environmental transformations—particularly ice loss—als o have global repercussions, affecting sea levels, weather systems, and biodiversity. [2] Th ese shifts underscore the urgency of international cooperation on climate mitigation and sustainable development, drawing attention from geographically distant nations like Viet nam, which face indirect impacts from Arctic-driven global changes.

Politically, the Arctic has become a focal point for strategic rivalry. U.S. President D onald Trump's renewed 2025 proposal to acquire Greenland exemplified escalating geop olitical attention, while intensified military activities by Russia and NATO have amplifie d security concerns over territorial claims and resource access. [3] Such developments are reshaping Arctic governance, with rising nationalism and militarization increasing the ris k of transforming the region into an arena for major power competition. [4]

For Vietnam, these dynamics present both risks and opportunities. Geographically r emote yet deeply interconnected through climate vulnerability and energy needs, Vietna m is gradually engaging in Arctic affairs to diversify energy sources, enhance climate res ilience, and expand its diplomatic influence. By participating in Arctic-related dialogues and global environmental initiatives, Vietnam seeks to secure a voice in resource manage ment and climate policy. [5]This study applies the theory of complex interdependence—em phasizing transnational cooperation, economic ties, and multilateral institutions—to anal yze Vietnam's evolving Arctic strategy. It explores how non-Arctic states might leverage soft power and scientific diplomacy to navigate this contested landscape, offering insigh ts into balancing national interests with global environmental imperatives.

2. Research Questions and Structure of the paper

This study is guided by several key research questions that aim to **explore** the linkages between de-globalization and Vietnam's strategic engagement with the Arctic. Central to the inquiry is understanding how de-globalization influences Vietnam's perceptions of its Arctic interests and shapes its strategic choices amid shifting global dynamics. Equally important is examining how the mechanisms of complex interdependence—namely sensitivity, vulnerability, and asymmetry—affect Vietnam's interactions with various Arctic stakeholders. Additionally, the study probes how Vietnam's Arctic strategy reflects its evolving role and positioning within global governance. These questions are designed to provide a nuanced understanding of how a non-Arctic state navigates the geopolitical, economic, and environmental challenges emerging from the region's **i**ncreasingly contested environment.

The structure of the paper is designed to logically develop the analysis and facilitate an integrated discussion of Vietnam's Arctic strategy. The study opens with an introduction that establishes the growing importance of the Arctic and sets the context for Vietnam's emerging interests amid de-globalization. This is followed by a review of the literature and a detailed explanation of the theoretical framework underpinning the analysis, with an emphasis on complex interdependence. Next, the evolution and driving factors of Vietnam's Arctic interests are explored through descriptive analysis, outlining key policy developments and historical milestones. Building on this foundation, the paper then offers an analytical framework that applies complex interdependence theory to Vietnam's strategic interactions in the Arctic. Finally, the study concludes with policy recommendations, implications for global governance, and suggestions for future research, thereby contributing to a broader understanding of how Vietnam is repositioning itself in the rapidly evolving Arctic landscape.

3. Literature Review

This section establishes the theoretical foundation for analyzing Vietnam's Arctic strategy through the lens of Complex Interdependence Theory (CIT). The concept of interdependence in international relations traces its roots to early functionalist scholars like David Mitrany, [6] who argued that technical cooperation on non-political issues could foste

r broader political integration and reduce conflict. Ernst Haas expanded this into neo-fun ctionalism, positing that economic integration could erode national sovereignty and spur supranational governance. [7]While these frameworks acknowledged interconnectedness, t hey lacked tools to analyze its multifaceted nature. [8]

The articulation of CIT by Robert Keohane and Joseph Nye marked a paradigm shif t. Moving beyond realism's focus on military power, CIT conceptualized states as enmes hed in transnational networks of economic, social, and environmental linkages. It empha sized the role of non-state actors (NGOs, corporations) and international regimes (rules, norms) in shaping cooperation and managing shared vulnerabilities. [9]CIT's core insight —that interdependence creates mutual sensitivities (e.g., to economic shocks) and necess itates institutionalized collaboration—provided a framework to analyze issues like clima te change and resource competition. [10]Subsequent scholars, however, critiqued CIT's lim itations in contexts of power asymmetry or security crises, highlighting its reduced expla natory power in confrontational scenarios. [11]

The rise of de-globalization since the late 2010s—marked by protectionism, reshori ng, and regional blocs—has further tested CIT's assumptions. Scholars like Forman argu e that this retreat from globalism fragments cooperation, intensifies resource competition, and weakens multilateral institutions, complicating Arctic governance. [12]These dynamic s are starkly visible in the Arctic, where climate-driven accessibility to 13% of global un discovered oil and 30% of natural gas reserves has heightened geopolitical rivalry. Major powers like the U.S. (e.g., Trump's renewed 2025 Greenland proposal) and Russia (mili tary posturing) now vie for influence, while non-Arctic states navigate competing impera tives of resource security and environmental stewardship. [13]

Southeast Asian engagement with the Arctic reveals divergent strategies. Singapore and Thailand prioritize scientific research and environmental advocacy, aligning with CI T's emphasis on transnational collaboration. Vietnam, however, adopts a multifaceted ap proach driven by interconnected motives: securing energy resources, enhancing climate r esilience, and expanding diplomatic influence. In pursuit of the latter, Vietnam seeks to e nhance its global stature by progressively participating in Arctic governance forums and dialogues.

This duality—balancing CIT's cooperative logic with de-globalization's competitive pressures—positions Vietnam as an insightful case study in navigating 21st-century interdependence. By integrating scientific diplomacy (e.g., joint Russia-Vietnam Arctic research) with strategic economic partnerships (e.g., with Norway and Canada), Vietnam **illustrates** how non-Arctic states can attempt to employ CIT principles to **manage** risks and **navigate** opportunities in a contested region. [14]

4. Theoretical Framework and Hypotheses

Understanding Vietnam's Arctic strategy requires analyzing interdependence through the lens of CIT. However, de-globalization's influence on resource competition and multilateralism necessitates a nuanced approach.

4.1 Foundations of Complex Interdependence Theory on Vietnam's Arctic strategy

As established in the previous section, Complex Interdependence Theory (CIT) offers a framework for understanding international relations beyond traditional power politics. For Vietnam's Arctic engagement, CIT's emphasis on multiple channels of interaction, transnational issues, and the role of non-state actors is particularly relevant. Specifically, the concepts of sensitivity, vulnerability, and asymmetry within the context of CIT provide key insights into Vietnam's strategic considerations in the Arctic. [15]In this context, these concepts are applied as follows:

1) **Sensitivity**: In the Arctic context, Vietnam's sensitivity relates to its susceptibility to changes in Arctic shipping routes, resource availability, and environmental conditions, particularly sea-level rise. [16]

2) **Vulnerability**: Vietnam's vulnerability is evident in its dependence on external partners for scientific expertise, technological resources, and access to Arctic governance forums. [17]

3) **Asymmetry**: Vietnam's non-Arctic status creates an inherent asymmetry in its interactions with Arctic states, impacting its ability to influence decision-making processes related to resource management and environmental protection. [18]

4.2 Integrating De-globalization into the Analytical Framework

Recent shifts toward de-globalization further complicate the dynamics of interdependence in the Arctic. As global economic interdependence wanes and states increasingly prioritize national interests over multilateral commitments, resource competition intensifies, and traditional power dynamics are altered. [19]This trend towards fragmentation and protectionism poses specific challenges for Vietnam's Arctic strategy:

1) **Increased Resource Competition**: De-globalization exacerbates competition for access to Arctic resources, potentially marginalizing non-Arctic states like Vietnam. [20]As states prioritize securing resources for their own populations, the likelihood of collaborative resource management diminishes, creating a more competitive environment where Vietnam's limited influence could be further disadvantaged.

2) **Erosion of Multilateralism**: The decline of multilateralism weakens the effectiveness of international regimes and institutions, making it more challenging for Vietnam to leverage these platforms to advance its interests. [21] As bilateral and regional agreements gain prominence, Vietnam must navigate a more complex web of relationships to secure its position within the Arctic governance landscape.

3) **Heightened Sensitivity and Vulnerability**: De-globalization can amplify Vietnam's sensitivity to external shocks by disrupting global supply chains and increasing economic instability. [22]This, coupled with its existing vulnerabilities in scientific capacity and access to Arctic governance, necessitates a proactive and adaptive strategy focused on building resilient partnerships and diversifying its engagement channels.

4.3 Hypotheses

Based on the theoretical framework integrating CIT and the impact of de-globalization, we propose the following hypotheses regarding Vietnam’s Arctic strategy:

H1: Vietnam’s energy security concerns, exacerbated by de-globalization and increased resource competition, are hypothesized to drive its strategic engagement with the Arctic, with emerging Arctic resources viewed as a potential alternative to domestic supply limitations.

H2: Environmental vulnerabilities, particularly those related to climate change and sea-level rise, are expected to heighten Vietnam's sensitivity to Arctic developments, **inc entivizing** increased investment in scientific research and collaboration with Arctic state s on climate change mitigation and adaptation strategies.

H3: Due to its non-Arctic status and the inherent asymmetries in Arctic governance, amplified by the trend towards de-globalization and bilateralism, Vietnam is likely to pri oritize the formation of strategic partnerships with both Arctic and non-Arctic states to e nhance its influence and access to resources and information.

H4: De-globalization is anticipated to prompt Vietnam to adapt its Arctic strategy to a more fragmented and competitive international system, leading to a greater emphasis o n bilateral and regional alliances, diversification of research and economic partnerships, and a more proactive approach to securing its long-term interests in the region.

5. Research Design and Methodology

This section will detail the research design, data collection methods, and analytical tools employed to examine Vietnam's Arctic strategy through the lens of Complex Interd ependence Theory (CIT). Our methodology is crafted to ensure a comprehensive, rigoro us, and nuanced analysis that can effectively address the complexities of Vietnam's enga gement with the Arctic in the context of de-globalization.

5.1 Research Design

This research employs a qualitative case study approach to investigate Vietnam's Ar ctic strategy within the context of de-globalization. By focusing on Vietnam as a single c ase, this design facilitates an in-depth exploration of the complex interplay between the c ountry's specific vulnerabilities, opportunities, and strategic choices in the Arctic. This m ethodology is particularly appropriate for our research objectives, as it allows for a thoro ugh examination of the historical, political, economic, and social factors that have shape d Vietnam's Arctic engagement. Through this concentrated focus, we can explore nuance d policy dynamics and contextual factors that might be overlooked in a broader, multi-co untry study.

The research design provides a valuable opportunity to apply Complex Interdependence Theory in a specific, real-world context. We aim to **carefully** examine how concepts of sensitivity, vulnerability, and asymmetry manifest in Vietnam's Arctic strategy, potentially refining or extending the theory based on our empirical findings. Furthermore, our study incorporates a longitudinal element, tracing the evolution of Vietnam's Arctic strategy from its early exploration stage (pre-2000) through to the current era of strategic adjustment. This temporal perspective enables us to identify key turning points, policy shifts, and the impact of changing global dynamics on Vietnam's approach.

To **trace** these policy developments, we employ process tracing methods to map the pathways that link Vietnam's domestic imperatives, global geopolitical shifts, and its evolving Arctic strategy. While focusing primarily on Vietnam, our design incorporates comparative elements by situating Vietnam's strategy within the broader context of non-Arctic state engagement in the region. This approach allows for a nuanced understanding of Vietnam's unique position while also drawing insights that may be applicable to other emerging economies.

Given the dynamic nature of Arctic geopolitics and the ongoing impacts of de-globalization, the qualitative case study design offers the necessary flexibility to incorporate new data or adjust our focus as the research progresses. To enhance the validity and reliability of our findings, we employ data triangulation by drawing from multiple sources **(**e.g., official policy documents, academic literature, government statements, and media reports**)** and methodological triangulation by combining different analytical approaches (process tracing, comparative analysis, and content analysis). Our analysis provides a detailed description of Vietnam's Arctic engagement, allowing readers to assess the transferability of our findings to other contexts.

5.2 Data Sources: Triangulating Evidence

The research draws upon a diverse range of empirical data sources to support data triangulation and enhance the credibility of the findings:

1) Policy Documents and Official Statements: Vietnamese government documents, including national Arctic strategies, policy pronouncements, and official statements relat

ed to Arctic affairs, serve as primary evidence of Vietnam's stated objectives, priorities, a nd policy shifts over time.

2) International and Regional Reports: Reports from international organizations (e. g., the Arctic Council, the UN), regional bodies (e.g., ASEAN), and think tanks provide contextual information on Arctic developments, energy markets, environmental impacts, and geopolitical dynamics.

3) Academic Literature and Think Tank Analyses: Scholarly articles, books, and pol icy papers offer theoretical and empirical insights on CIT, de-globalization, non-Arctic st ate strategies, and the evolving geopolitical landscape of the Arctic.

5.3 Analytical Tools: Enhancing Clarity and Rigor

To facilitate a comprehensive and rigorous analysis of Vietnam's Arctic strategy in t he context of de-globalization, we employ a combination of analytical tools that build up on our qualitative case study approach and the theoretical framework of Complex Interd ependence Theory (CIT).

1) Process Tracing: We utilize process tracing to identify the potential causal mecha nisms and pathways linking Vietnam's domestic imperatives, global geopolitical shifts, a nd its evolving Arctic strategy. This method allows us to construct a detailed narrative of Vietnam's engagement with the Arctic, highlighting key decision points and strategic shi fts over time.

2) Conceptual Mind Map: To visually represent the interaction of key CIT concepts within Vietnam's Arctic strategy, we developed a conceptual mind map (Fig. 1). This he uristic device illustrates the structural linkages between our proposed hypotheses (H1-H 4), the core concepts of sensitivity, vulnerability, and asymmetry, and the specific empiri cal manifestations (e.g., resource competition, erosion of multilateralism) within the cont ext of Vietnam's Arctic engagement, serving as a guiding framework for our step-by-step analysis.

3) Content Analysis: We conduct content analysis of relevant policy documents, off icial statements, and media reports to trace the evolution of Vietnam's Arctic discourse a nd policy priorities over time.

4) Triangulation: To enhance the validity and reliability of our findings, we employ both data triangulation (using multiple documentary sources) and methodological triangu lation (combining process tracing and content analysis).

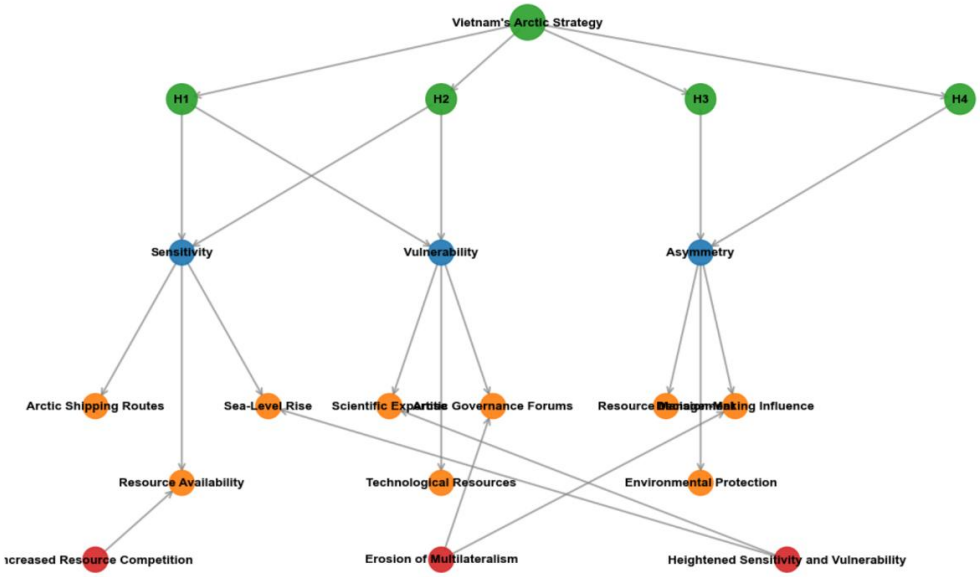


Fig. 1 Conceptual mind map of Vietnam's Arctic strategy based on Complex Interdependence Theory.

By integrating these analytical tools, we aim to provide a nuanced and theoretically grounded analysis of Vietnam's Arctic strategy in the context of de-globalization. This m ulti-faceted approach allows us to better capture the complexity of Vietnam's engagemen t with the Arctic while maintaining analytical transparency throughout the research proce ss.

6. Evolution and Driving Factors of Vietnam's Arctic Strategy

This chapter traces the evolution of Vietnam's Arctic interests through a qualitative case study approach, employing process tracing and comparative analysis to **explore the driving factors** behind its engagement.

6.1 Early Exploration Stage (Pre-2000)

Vietnam's Arctic engagement emerged in the pre-2000 era, initially driven by scient ific curiosity and foundational international cooperation (Fig. 2). During 1990–2000, its Arctic involvement remained limited, prioritizing domestic economic growth and region

al energy partnerships. [23]Early interactions with Arctic states like Norway focused on bro ader diplomatic and economic ties rather than polar affairs, while engagement with the U. S., Canada, and Iceland in Arctic-specific matters was negligible. [24]By contrast, Arctic n ations during this period intensified their focus on regional resource development and en vironmental governance, exemplified by U.S.-Canada collaboration on Arctic security an d Iceland's strategic positioning as a key Arctic actor. [25]

A notable milestone occurred in 1987 with the establishment of the Russia-Vietnam Tropical Research and Technology Center, representing Vietnam's first major foray into polar-related science. Over 35 years, the center conducted 45+ Arctic expeditions and pu blished 173 scientific papers, with Russian collaboration deepening notably after 2010. [26] Though explicit Arctic policy frameworks were absent, this initiative underscored Vietna m's strategy of building scientific expertise through international partnerships—a precur sor to later strategic interests in energy and climate resilience.

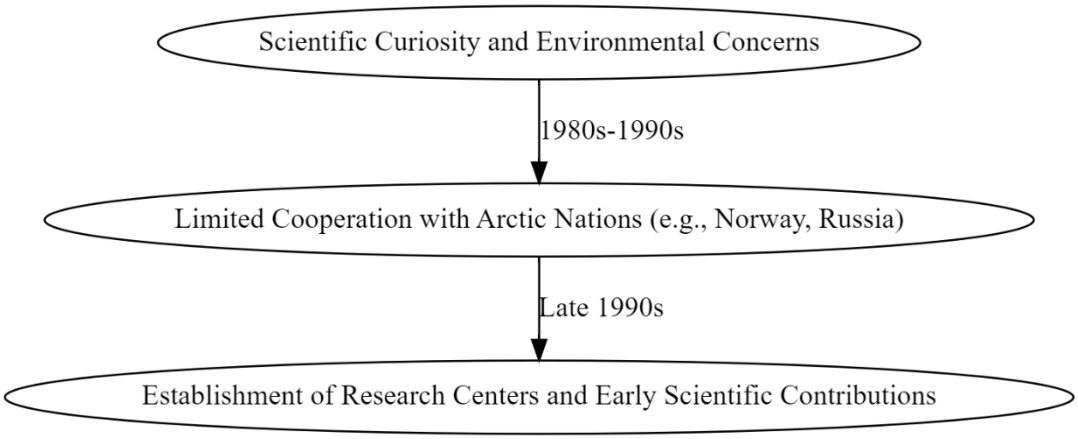


Fig. 2 The evolutionary path of Vietnam's early Arctic exploration stage (pre-2000).

During this formative phase, Vietnam mirrored the trajectory of other non-Arctic sta tes like South Korea and Japan, whose early Arctic engagement likewise prioritized scie ntific research and multilateral environmental programs. These nations recognized the Ar ctic's global environmental significance and invested in polar research capabilities to bui ld future geopolitical relevance. For Vietnam, growing awareness of climate vulnerabiliti es—particularly rising sea levels threatening its 3,260 km coastline—furthered its interes t in Arctic climate systems. Scientific collaboration also laid the groundwork for later res

ource diplomacy, as studies on Arctic ice melt revealed potential shipping routes and hyd rocarbon opportunities relevant to Vietnam's energy-dependent economy.

While lacking direct resource competition strategies, Vietnam's early actions **sugge sted** an implicit understanding of the Arctic's interconnectedness with global systems—a perspective aligning with Complex Interdependence Theory. This period **contributed to three foundational areas**:

1) **Scientific Capacity**: Leveraging Russian expertise to build polar research infrast ructure.

2) **Climate Advocacy**: Positioning itself as a vulnerable state within global climate discourse.

3) **Diplomatic Networking**: Using science as a soft power tool to access Arctic gov ernance circles.

By 2000, Vietnam's Arctic profile remained nascent but strategically oriented, settin g the stage for its post-2010 pivot toward energy security and multilateral Arctic governa nce participation.

6.2 Rapid Development Stage (2000–2010)

The 2000–2010 period saw Vietnam transition from nascent scientific interest to str ategic energy cooperation in the Arctic, facilitated by deepening ties with Russia (Fig. 3). A significant development was the 2006 establishment of RusVietpetro, [27]a joint venture between PetroVietnam and Russia's Zarubezhneft, which by 2009 began developing oil fields in Russia's Nenets Autonomous District. [28]This marked Vietnam's first major Arcti c energy project, **aiming to secure** access to hydrocarbon resources while strengthening bilateral relations with Moscow. Though explicit cooperation with Denmark/Greenland r emained absent, Vietnam's strategy increasingly prioritized energy security and economi c interests, driven by its growing oil-dependent economy (with energy accounting for 25% of imports by 2010).

Concurrently, Arctic states intensified their regional focus:

1) Norway formalized Arctic policies emphasizing sustainable resource developme nt. [29]

2) The U.S. released its 2009 National Arctic Strategy, prioritizing sovereignty and energy exploration. [30]

3) Canada bolstered its Arctic territorial claims, while Iceland elevated Arctic diplo macy as a foreign policy pillar, culminating in its 2011 Arctic Policy Resolution. [31]

Vietnam's climate consciousness also grew, aligning with global trends. Rising sea l evels spurred participation in international climate initiatives, [32]though direct Arctic envi ronmental cooperation remained limited. [33]Its 2007 bid for Arctic Council observer statu s reflected strategic institutional engagement, mirroring approaches by China and India b ut with a distinct emphasis on bilateral partnerships over multilateralism. This phase **hig hlighted** three strategic pillars:

1) Energy Pragmatism: Leveraging Russian expertise to offset domestic energy defi cits.

2) Climate Diplomacy: Positioning as a vulnerable state to gain legitimacy in Arctic discourse.

3) Institutional Balancing: Pursuing observer roles while avoiding overt alignment with major powers.

Vietnam's output from Arctic energy projects remained modest, yet these efforts lai d critical infrastructure for future expansion. By the decade's end, its Arctic strategy refle cted Complex Interdependence Theory principles—navigating asymmetric power dynam ics (via Russia) while building sensitivity to climate risks within global governance fram eworks.

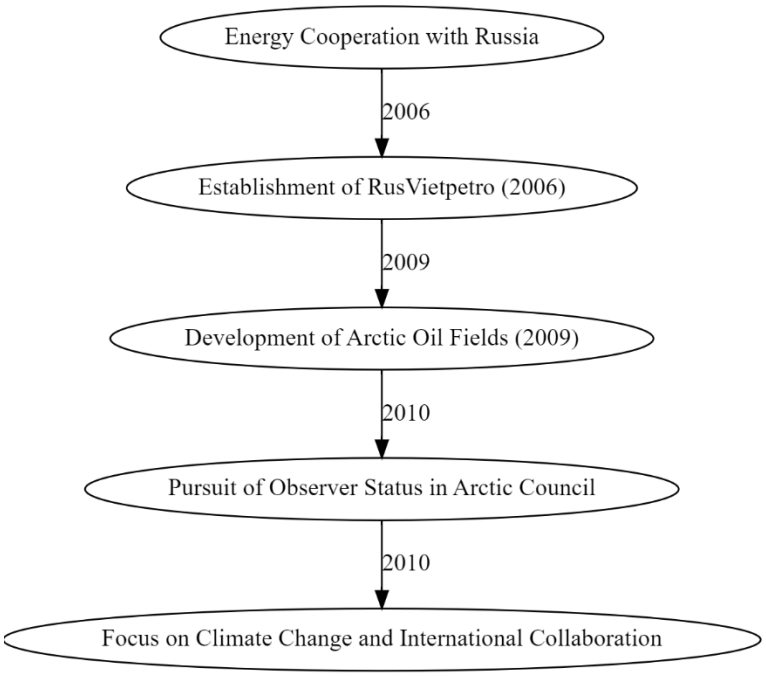


Fig. 3 The evolutionary path of Vietnam's rapid development stage (2000–2010)

6.3 Strategic Adjustment in the Era of De-globalization (2010–Present):

Facing de-globalization and heightened global competition, Vietnam recalibrated its Arctic strategy between 2011 and 2020, prioritizing multilateral engagement while maintaining critical bilateral partnerships (Fig. 4). The pursuit of Arctic Council observer status became a key diplomatic objective, enabling Vietnam to align its "climate-vulnerable" narrative with Arctic governance debates. [34] Though direct cooperation with Denmark or Greenland remained undeveloped, Vietnam's multilateral activism laid the groundwork for potential future collaboration.

Energy security remained central to Vietnam's bilateral agenda, particularly with Russia. Despite geopolitical complexities, PetroVietnam deepened ties with Russian firms: the 2014 Pechora Sea oilfield agreement with Rosneft (though delayed by sanctions), expanded Gazprom Neft collaboration in 2015, and sustained operations by RusVietpetro in the Nenets Autonomous District. [35]These efforts highlighted Vietnam's determination to secure Arctic energy access despite legal and political hurdles.

Cooperation diversified across Arctic states. Norway transitioned from a marine economy partner to a green energy collaborator, aligning with Vietnam's renewable transition goals. [36] The 2017 Canada-Vietnam Comprehensive Partnership uniquely linked Arctic

resource management with Mekong Delta sustainability, creating cross-regional governance frameworks. Iceland's 2011 Arctic policy facilitated environmental technology transfers, [37]while Vietnam leveraged the U.S.'s 2013 Arctic strategy update to access climate research networks. [38]

Beyond energy, Vietnam broadened its engagement to scientific, security, and economic domains. Participation in Russia's "Arctic Safety" exercises enhanced cold-weather emergency response capabilities. Fisheries interests persisted despite UNCLOS constraints, reflecting Vietnam's ambition to explore Arctic economic niches. Climate change remained central to Vietnam's strategy, with rising sea levels and agricultural disruptions driving demands for international cooperation and mitigation technologies. [39]

Vietnam's approach diverged from peers like South Korea and Singapore. While others prioritized multilateral frameworks, Vietnam maintained reliance on bilateral ties—particularly with Russia—to anchor its energy and security interests. This asymmetric strategy balanced pragmatic resource access with climate diplomacy, contrasting with Singapore's ASEAN-centric multilateralism.

The strategy's limitations emerged in balancing competition and cooperation. Sanctions on Russia disrupted joint energy projects, while Vietnam's non-Arctic status constrained fisheries claims. [40] Nevertheless, by integrating climate vulnerability discourse with energy pragmatism, Vietnam has sought to establish a distinctive role in Arctic geopolitics, demonstrating how non-Arctic states can attempt to leverage niche priorities to navigate this contested region.

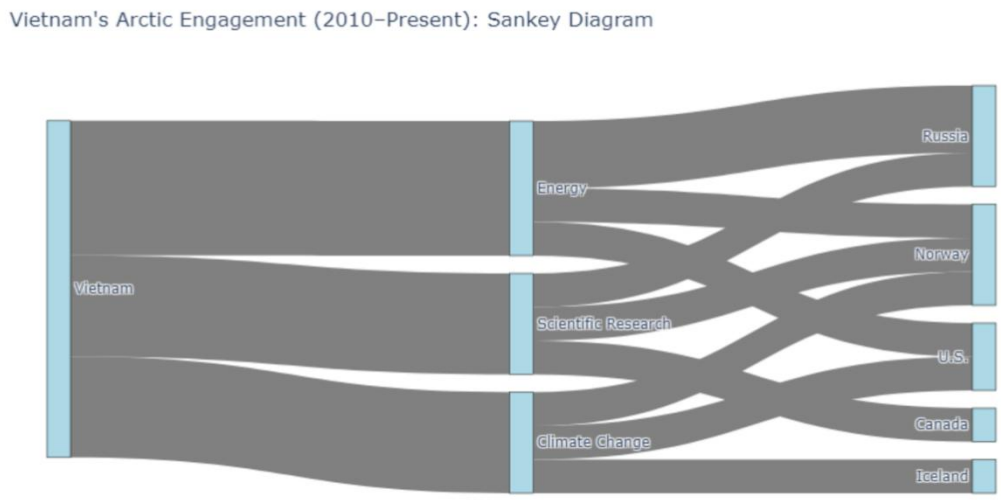


Fig. 4 Sankey diagram of Vietnam's Arctic engagement and bilateral partnerships (2010–Present).

7. Empirical Analysis: Application of CIT

By applying CIT to Vietnam's Arctic strategy, we can better understand the interconnected economic, environmental, and geopolitical factors that shape Vietnam's interests and actions in the region. This approach allows us to move beyond traditional power politics and explore the nuanced ways in which Vietnam navigates its non-Arctic status to pursue its strategic goals in this increasingly important global arena.

7.1 Identification of Key Arctic Strategic Interests of Vietnam

As demonstrated in the previous section, energy security constitutes a primary driver of Vietnam’s engagement in Arctic affairs. Vietnam's rapid industrialization and economic growth have led to a significant increase in energy demand, outpacing domestic supply capabilities. With limited domestic reserves, Vietnam is increasingly looking abroad for energy resources. The Arctic, with its vast untapped oil, gas, and mineral resources—becoming increasingly accessible due to climate change-induced ice melting—presents a promising alternative source for Vietnam's growing energy needs. This interest is evident in strategic partnerships like RusVietpetro and agreements with companies such as Rosneft and Gazprom Neft, underscoring Vietnam's commitment to securing access to Arctic energy resources.

The pursuit of Arctic energy resources is not merely about meeting current demand but also about ensuring long-term energy security. Vietnam's National Energy Development Strategy to 2030, with a vision to 2045, emphasizes the need for diversified energy sources and reduced dependence on fossil fuel imports. The Arctic's potential to provide a stable, long-term energy supply aligns well with this strategic vision, explaining Vietnam's persistent engagement in Arctic energy projects despite challenges such as Western sanctions on Russia.

Environmental concerns and climate change mitigation represent a second major priority in Vietnam’s Arctic agenda. The country's extensive coastline and low-lying regions, including the Mekong Delta, make it highly vulnerable to climate change impacts, including rising sea levels and extreme weather events. According to the World Bank, Vietnam is one of the five countries most likely to be affected by global warming. This vulnerability has prompted increased engagement in Arctic scientific research and environmental monitoring, as exemplified by the Russia-Vietnam Tropical Research and Technology Center's activities over the past 35 years.

Vietnam's interest in Arctic environmental research goes beyond mere observation. The country recognizes that Arctic climate changes have global implications, potentially affecting weather patterns, ocean currents, and ecosystems worldwide. By engaging in Arctic research, Vietnam aims to enhance its understanding of these global environmental dynamics, improve its climate change adaptation strategies, and contribute to international efforts to mitigate climate change impacts.

Geopolitically, Vietnam seeks to position itself strategically within the emerging Arctic arena to safeguard its interests as a significant ASEAN member and **enhance its international standing**. This is reflected in Vietnam's pursuit of observer status in relevant Arctic institutions and its efforts to diversify Arctic engagement beyond energy interests. Participation in initiatives like Russia's “Arctic Safety” exercises and interest in Arctic fisheries demonstrate Vietnam's ambition to expand its Arctic footprint across various sectors. Vietnam's geopolitical interests in the Arctic are also tied to its broader foreign policy objectives of maintaining strategic autonomy and balancing relations with major powers. By engaging in Arctic affairs, Vietnam aims to diversify its international partnerships,

reduce over-reliance on any single power, and enhance its voice in global governance str uctures. This approach aligns with Vietnam's policy of “multilateralization and diversific ation” in foreign relations, allowing it to navigate the complex geopolitical landscape of the Arctic while advancing its national interests.

Complementing these geopolitical objectives is the consideration of broader econo mic opportunities. Beyond energy resources, Vietnam sees potential economic opportuni ties in the Arctic's emerging sectors. The opening of new shipping routes, particularly the Northern Sea Route, has the potential to impact global trade patterns. For Vietnam, a co untry heavily reliant on maritime trade, these new routes could offer shorter and more co st-effective shipping options to European markets. Additionally, Vietnam's growing expe rtise in sectors such as shipbuilding and maritime services could find new applications in the Arctic context, opening up potential new markets and economic partnerships.

Furthermore, Vietnam's engagement with the Arctic also serves as an **avenue** for sci entific and technological advancement. Collaboration with Arctic states and participation in international Arctic research projects provide opportunities for Vietnamese scientists and institutions to access cutting-edge technologies, methodologies, and data. This know ledge transfer can have spillover effects, enhancing Vietnam's overall scientific and tech nological capabilities, which are crucial for its long-term economic development and co mpetitiveness.

7.2 Sensitivity Analysis

Building upon the strategic interests identified above, this section applies the CIT c oncept of sensitivity to analyze Vietnam's exposure to Arctic developments across four k ey dimensions: energy markets, environmental changes, shipping dynamics, and technol ogical advancements.

Primarily, global energy market dynamics present significant uncertainties for Vietn am’s development. Vietnam's reliance on imported energy makes it highly susceptible to fluctuations in global energy markets. The accessibility of Arctic oil and gas reserves cou ld offer an alternative source, potentially reducing Vietnam's sensitivity to global market volatility. However, any instability in Arctic energy production or geopolitical tensions a

ffecting resource access could significantly impact Vietnam's energy supply chain. This s ensitivity is evident in Vietnam's persistent pursuit of Arctic energy projects, even in the face of challenges such as delays due to Western sanctions on Russia. The degree of Viet nam's energy sensitivity is underscored by its rapidly growing energy consumption. Acco rding to the International Energy Agency, Vietnam's energy demand is projected to grow by about 5% annually until 2030. This growth rate, coupled with declining domestic pro duction, increases Vietnam's exposure to external energy market shocks. The Arctic's pot ential as a stable, long-term energy source could help mitigate this sensitivity, explaining Vietnam's strategic focus on Arctic energy partnerships.

Environmental sensitivity is another critical factor shaping Vietnam's Arctic strateg y. The country's extensive coastline and low-lying regions make it acutely sensitive to gl obal sea-level changes, with melting Arctic ice posing a tangible threat to coastal commu nities and agricultural sectors. This environmental sensitivity has driven Vietnam's increa sed interest in Arctic environmental research and climate change mitigation efforts, refle cted in its participation in international climate change collaborations and a growing focu s on Arctic environmental issues. Specifically, Vietnam's environmental sensitivity is par ticularly acute in the Mekong Delta region, which is home to over 17 million people and produces about half of the country's rice.

Furthermore, changes in Arctic shipping routes, particularly the opening of the No rthern Sea Route, have significant implications for Vietnam's trade patterns and economi c interests. As a country heavily reliant on maritime trade, Vietnam is sensitive to shifts i n global shipping dynamics. The potential for shorter and more cost-effective shipping ro utes through the Arctic could impact Vietnam's competitiveness in global markets and in fluence its strategic economic planning, further underscoring the country's sensitivity to Arctic developments. The Northern Sea Route could reduce shipping times between East Asia and Europe by up to 40% compared to traditional routes through the Suez Canal. F or Vietnam, this could mean faster access to European markets for its exports and reduce d shipping costs for imports. However, it also introduces potential competition from othe r Asian countries that might similarly benefit from these new routes. Vietnam's sensitivit y to these changes is reflected in its growing interest in Arctic shipping developments an d efforts to position itself advantageously in this evolving maritime landscape.

Finally, Vietnam's sensitivity to technological advancements in Arctic exploration and resource extraction represents a crucial dimension. As a relatively new player in Arctic affairs, Vietnam is keenly aware of the rapid technological progress in areas such as deep-sea drilling, ice-class vessel construction, and environmental monitoring systems. Any significant technological breakthroughs could alter the accessibility of Arctic resources or the feasibility of Vietnam's Arctic projects, making the country sensitive to global trends in Arctic-related technologies. This technological sensitivity is evident in Vietnam's efforts to engage in joint research and development initiatives with Arctic states and its investments in building domestic capacity in relevant fields. The country's collaboration with Russia in Arctic technology development, for instance, reflects its attempt to stay abreast of technological advancements and reduce its vulnerability to technological gaps.

7.3 Vulnerability Assessment

Resource access dependency represents a critical dimension of Vietnam’s vulnerability in the Arctic. As a non-Arctic state, Vietnam lacks direct territorial claims or sovereign rights in the region, making its access to resources entirely contingent upon cooperation with Arctic powers. This dependency increases its exposure to shifting alliances and policy changes among key players. For instance, Vietnam's strategic partnership with Russia in Arctic energy development exemplifies this vulnerability, as it exposes the country to geopolitical risks, including the impact of Western sanctions on joint projects. Unlike Arctic states that can unilaterally authorize resource exploration within their jurisdictions, Vietnam must navigate complex international partnerships to secure its interests, leaving its energy strategy highly susceptible to shifts in global geopolitical dynamics.

This geopolitical vulnerability is further compounded by a reliance on external partners for scientific expertise and technological resources. While efforts to build domestic capacity—such as through the Russia-Vietnam Tropical Research and Technology Center—aim to mitigate this reliance, they simultaneously highlight an ongoing need for international collaboration. The specialized nature of Arctic operations dictates that technologies for harsh conditions (e.g., ice-class vessels, specialized drilling equipment, and advanced environmental monitoring systems) remain primarily concentrated among Arctic states and technologically advanced nations. Vietnam's limited indigenous capacity in these

areas necessitates heavy reliance on knowledge transfer, making its Arctic ambitions vul nerable to potential restrictions on technology sharing or deteriorations in bilateral relati onships.

Environmentally, the broader implications of Arctic ecological degradation add a pr ofound layer of vulnerability. As a country highly susceptible to climate change, Vietnam faces significant existential and economic risks from Arctic ice melt, including increase d extreme weather events and long-term threats to coastal stability. This vulnerability is particularly acute due to the country's geographical features and economic structure. The World Bank estimates that climate change impacts could reduce Vietnam's GDP by up t o 3.5% by 2050. Its extensive coastline, low-lying delta regions, and reliance on agricult ure make it exceptionally vulnerable to sea-level rise and saltwater intrusion. These struc tural vulnerabilities directly link Vietnam's domestic stability to Arctic environmental ch anges, driving its proactive engagement in polar climate research and international negot iations.

Institutionally, Vietnam's non-Arctic status engenders vulnerability within the regio nal governance framework. As an outsider seeking to participate in Arctic affairs, Vietna m risks marginalization or exclusion from key decision-making processes. This structura l vulnerability is evident in Vietnam's pursuit of observer status in the Arctic Council; wh ile such status provides a platform for participation, it does not grant voting rights or dire ct influence over policy outcomes. Consequently, Vietnam's capacity to shape Arctic gov ernance and protect its national interests remains largely dependent on its diplomatic ma neuvering and the receptiveness of the permanent Arctic states.

Finally, Vietnam's economic investments in the Arctic, particularly in the energy sec tor, generate distinct financial vulnerabilities. Arctic energy projects demand substantial capital and carry inherently high risks due to extreme operating environments and geopo litical complexities. Disruptions to these joint ventures—whether stemming from enviro nmental hazards, technological failures, or international sanctions—could have consider able economic repercussions for Vietnam. Moreover, as Vietnam attempts to integrate Ar ctic resources into its broader energy security calculus, it paradoxically increases its expo

sure to the region's localized political and economic dynamics, including market fluctuat ions and policy shifts among sovereign Arctic states.

7.4 Evaluation of Asymmetry in Arctic Governance

The Arctic Council and related governance institutions are predominantly controlle d by Arctic states, placing Vietnam at a significant disadvantage in terms of influence an d decision-making power. This institutional asymmetry is evident in Vietnam's pursuit of observer status in the Arctic Council, a position that provides limited participatory rights compared to full members. While Vietnam's efforts to engage in Arctic governance thro ugh other international forums and bilateral relationships reflect its attempt to mitigate th is imbalance, the fundamental power disparity in Arctic institutions remains a significant challenge.

This institutional asymmetry is structurally embedded within the Arctic Council itse lf. The eight Arctic states (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States) hold exclusive voting rights and decision-making authority. Obse rver states, even when granted such status, can only participate in working group activiti es and cannot vote on Council matters. This framework creates a clear hierarchy that inh erently disadvantages non-Arctic states like Vietnam in shaping Arctic policies.

Legally and materially, Vietnam's non-Arctic status creates inherent asymmetries in its ability to access resources directly, particularly in the energy sector where Arctic stat es maintain primary control over exploration and extraction. The country's reliance on pa rtnerships with Arctic states, particularly Russia, highlights this power imbalance. The ex tent of this disparity is underscored by the United Nations Convention on the Law of the Sea (UNCLOS), which grants Arctic coastal states exclusive economic rights within thei r 200-nautical-mile Exclusive Economic Zones (EEZs), with potential extensions based on continental shelf claims. This legal structure effectively precludes non-Arctic states fr om direct resource access, forcing them to negotiate from a position of inherent disadvan tage.

Furthermore, scientific and technological disparities complicate Vietnam's position in Arctic affairs. The country's limited experience in polar environments and its developi

ng scientific infrastructure place it at a disadvantage compared to established Arctic play ers, which possess dedicated polar research institutes, icebreaker fleets, and decades of a ccumulated scientific data. Vietnam, in contrast, is still in the early stages of building its Arctic research capacity. To address this gap, Vietnam has pursued strategic partnerships in areas such as environmental monitoring and energy collaboration. While critical for e levating Vietnam's profile, these alliances also underscore its ongoing reliance on foreign technology and the challenges of achieving parity.

Compounding these technological gaps is a profound information asymmetry. Arcti c states, by virtue of their geographical position and long-standing engagement, possess vast repositories of data, traditional knowledge, and practical operational experience. Thi s information deficit places Vietnam at a disadvantage in policy formulation, risk assess ment, and strategic planning. Although Vietnam actively seeks to enhance its knowledge base through international collaborations and academic exchanges, the lack of historical data and long-term observational records continues to constrain its ability to fully unders tand and respond to Arctic dynamics independently.

Finally, significant asymmetries persist in the economic and diplomatic spheres. Ec onomically, Arctic states and established multinational corporations hold a distinct first-mover advantage, possessing the capital, market access, and operational experience nece ssary for large-scale Arctic projects. Consequently, developing non-Arctic states like Vie tnam often must accept less favorable terms in joint ventures to gain market entry. Diplo matically, Arctic states benefit from well-established regional networks, historical ties, a nd intrinsic legitimacy. As a relative newcomer, Vietnam **faces a steeper trajectory** in b uilding credibility and amplifying its voice in Arctic forums. This soft power asymmetry requires Vietnam to be highly strategic in its engagements, necessitating the utilization o f niche strengths—such as its climate vulnerability narrative and advocacy for sustainabl e development—to enhance its influence despite its non-Arctic status.

7.5 The Impact of De-globalization

The trend towards de-globalization has intensified global competition for resources, forcing Vietnam to adopt more pragmatic, bilateral, and regional approaches to secure it s energy and environmental interests in the Arctic (Fig. 5). This shift has heightened the i

mportance of Vietnam's bilateral relationships, particularly with Russia, in accessing Arc tic resources. However, it also increases the risks associated with over-reliance on a singl e partner, necessitating a diversification of strategic relationships to mitigate potential vu lnerabilities. The intensification of resource competition is evident in the growing asserti veness of Arctic states in claiming and defending their territories and resources. For insta nce, Russia's increased military presence in the Arctic and its expansive continental shelf claims underscore the heightened stakes in regional resource control. This trend complic ates Vietnam's efforts to secure stable access to Arctic resources, requiring more nuanced diplomatic maneuvering and potentially accepting higher economic or political costs for resource partnerships.

As traditional global alliances fragment, Vietnam's diplomatic maneuvering become s increasingly crucial. The country's strategy now hinges on forming flexible coalitions t hat can navigate the fragmented global order, as evidenced by its efforts to engage with multiple Arctic and non-Arctic states on various issues. The erosion of multilateralism p oses challenges for Vietnam's engagement in Arctic governance structures, prompting th e country to strengthen its position through a combination of bilateral partnerships, regio nal cooperation, and participation in international scientific collaborations. This fragmen tation is particularly challenging for Vietnam in the context of Arctic affairs, where it lac ks the historical ties and established networks that Arctic states enjoy. While the breakdo wn of traditional alliances may create opportunities for new partnerships, it inherently in creases the complexity and unpredictability of Arctic diplomacy. Vietnam must carefully navigate this fragmented landscape, balancing its relationships with major powers like R ussia, China, and the United States, while also seeking common ground with other non-A rctic states that share similar interests.

The rise of economic nationalism and resource protectionism among Arctic states p resents new challenges for Vietnam's Arctic strategy. As Arctic nations prioritize domesti c interests and tighten control over their resources, Vietnam may face increased barriers t o access. This trend necessitates a more nuanced and adaptive approach, potentially invo lving increased economic incentives, technology transfers, or strategic concessions to ma intain market entry. For instance, Russia's legislative moves requiring majority Russian o wnership in strategic sectors, including Arctic energy projects, could impact Vietnam's jo

int ventures in the Russian Arctic. Such protectionist measures may force Vietnam to rea ssess its energy strategy, potentially seeking alternative partnerships or investing more in domestic energy alternatives to reduce dependence on external resources.

Further complicating this landscape is the trend towards technological decoupl ing between major powers, which may severely impact Vietnam's ability to access cuttin g-edge Arctic technologies and scientific knowledge. This friction could affect Vietnam's participation in joint research projects, technology transfers, and capacity-building initia tives. The impact of technological decoupling is particularly significant in critical areas s uch as satellite technology for monitoring, advanced drilling techniques, and ice-breakin g vessel construction. Vietnam's limited domestic capabilities in these domains make it v ulnerable to restrictions on technology transfers, potentially hindering its ability to fully engage in and benefit from Arctic opportunities.

Furthermore, de-globalization trends are reshaping global value chains, carrying dir ect implications for Vietnam's economic interests. The potential shift towards the regiona lization of supply chains and the emphasis on strategic autonomy in critical sectors may affect Vietnam's positioning in Arctic-related industries. For instance, the development o f Arctic shipping routes might be influenced by changing patterns of global trade. In resp onse, the push for self-reliance could see Vietnam investing more heavily in domestic sci entific institutions, training programs for Arctic specialists, and the development of indig enous technologies adapted for polar conditions. Over the long term, such initiatives cou ld help Vietnam reduce its structural vulnerabilities and mitigate existing asymmetries.

Ultimately, de-globalization has contributed to a broader geopolitical realignm ent, with profound implications for Arctic governance. Increasing tensions between majo r powers, particularly between Russia and Western nations, have spilled over into Arctic affairs, complicating international cooperation. For Vietnam, this realignment necessitate s a careful balancing act: maintaining productive relationships with key Arctic players w hile avoiding entanglement in great power conflicts. The weakening of multilateral foru ms and international legal frameworks threatens to marginalize Vietnam's role and limit i ts policy influence. As global institutions face these challenges, there may be a greater e mphasis on regional approaches. This could allow Vietnam to leverage its position as a s

ignificant ASEAN member to engage in Arctic affairs through an Asian regional lens; co nversely, it risks excluding Vietnam entirely if Arctic governance becomes exclusively re gionalized among the core Arctic states.

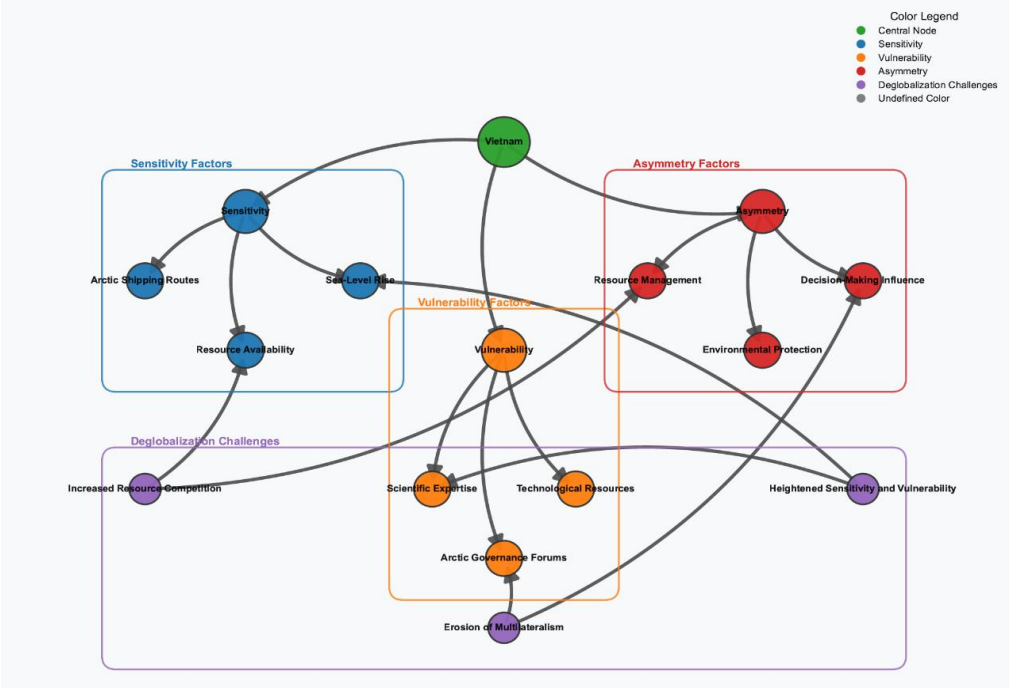


Fig. 5 Complex interdependence network of Vietnam's Arctic strategy under de-globalization challenges.

The changing global landscape also necessitates new models of scientific collaborat ion. With potential restrictions on international scientific exchanges and data sharing, Vi etnam must explore innovative approaches to maintain its involvement in Arctic researc h. This could involve increased participation in open-source scientific initiatives, virtual research collaborations, or the development of regional scientific networks that complem ent traditional programs. Vietnam might also focus on building its capacity in data analy sis and modeling, allowing it to contribute meaningfully to Arctic research despite a limi ted physical presence in the region.

In conclusion, the trends towards de-globalization present significant structural chal lenges to Vietnam's Arctic strategy, requiring a rigorous reevaluation of its approaches to resource access, diplomatic engagement, technological development, and scientific colla boration. However, these disruptions also offer opportunities for Vietnam to carve out a u nique niche, leveraging its strengths as a developing nation with a critical stake in global

environmental and economic stability. Vietnam's ability to adapt to these shifting geopolitical and economic dynamics will ultimately determine the long-term viability and success of its Arctic engagement strategy.

8. Conclusion, Policy Recommendations, and Future Research Directions

By applying Complex Interdependence Theory (CIT), this study has delved into how sensitivity, vulnerability, and asymmetry shape Vietnam's strategic choices in the Arctic. This analytical framework not only elucidates the Vietnamese case but also provides a valuable template for assessing the behavior of other emerging economies navigating similar geopolitical landscapes.

8.1 Summary of Key Findings

This study has traced the evolution of Vietnam's Arctic interests through three distinct stages: the early exploration stage (pre-2000), the rapid development stage (2000–2010), and the strategic adjustment era in the context of de-globalization (2010–present). The research reveals a complex interplay of factors driving Vietnam's engagement, shaped by both domestic imperatives and global geopolitical shifts.

In the **early exploration stage**, Vietnam's interest was primarily driven by scientific curiosity and nascent international cooperation. The establishment of the Russia-Vietnam Tropical Research and Technology Center in the late 1980s marked its first significant step into polar-related research, laying the groundwork for future involvement.

The **rapid development stage** witnessed a significant expansion of engagement, driven by economic needs and growing climate change concerns. This period was characterized by increased energy cooperation with Russia, particularly in oil and natural gas development. The establishment of RusVietpetro in 2006 exemplified this focus, marking Vietnam's first major foray into Arctic energy resources.

The current era of strategic adjustment, set against the backdrop of de-globalization, has compelled Vietnam to recalibrate its Arctic strategy. Vietnam has actively participated in multilateral mechanisms, sought observer status, and strengthened bilateral ties with countries like Russia and Norway. It has also diversified its engagement to encompass s

cientific research, emergency response, and fisheries, demonstrating efforts to expand its footprint beyond core energy interests.

Applying the CIT perspective, our analysis highlights how three structural factors have shaped Vietnam's strategic responses:

1) **Sensitivity**: Vietnam's energy security deficits and severe environmental vulnerabilities have heightened its sensitivity to Arctic developments, driving its persistent pursuit of energy projects and climate mitigation collaborations.

2) **Vulnerability**: As a non-Arctic state, Vietnam's vulnerability is manifest in its reliance on Arctic powers for resource access and governance participation, prompting a strategy of forming strategic partnerships and pursuing observer status.

3) **Asymmetry**: The institutional and resource access asymmetries inherent in Arctic governance have forced Vietnam to adopt a multifaceted approach, blending bilateral partnerships, regional cooperation, and scientific diplomacy to enhance its marginalized influence.

Revisiting our initial hypotheses, the empirical evidence provides strong support for H1, H2, and H3, and partial support for H4:

H1 (Supported): Vietnam's energy security concerns, exacerbated by de-globalization and resource competition, have indeed driven its strategic engagement. This is evidenced by its persistent pursuit of Russian energy projects despite legal and political hurdles.

H2 (Supported): Environmental vulnerabilities—particularly sea-level rise—have heightened Vietnam's sensitivity to Arctic developments, leading to increased investments in scientific research and climate adaptation strategies.

H3 (Supported): Due to its non-Arctic status and institutional asymmetries, Vietnam has prioritized strategic partnerships, evident in bilateral energy ties with Russia, scientific collaborations, and its pursuit of Arctic Council observer status.

H4 (Partially Supported): While de-globalization has compelled Vietnam to adapt its strategy, the emphasis on bilateral and regional alliances was already a foundational feature of its approach prior to the current de-globalization trend. However, intensified gl

obal resource competition has undeniably triggered a more proactive stance in securing i ts long-term interests.

8.2 Policy Recommendations for the Vietnamese Government

First, Vietnam should focus on diversifying its Arctic partnerships beyond its histori cal reliance on Russia. Expanding scientific collaborations, joint resource exploration, an d environmental initiatives with a broader range of Arctic and non-Arctic states would re duce its vulnerability to geopolitical shocks. Second, investing in domestic scientific and technological capabilities must be a priority. Establishing dedicated polar research cente rs, funding educational programs, and facilitating knowledge transfer would strengthen Vietnam's credibility and reduce its dependence on external expertise. Finally, Vietnam s hould develop a comprehensive national strategy that integrates Arctic engagement with broader climate adaptation efforts. Leveraging its position within ASEAN to promote col lective engagement could further amplify its voice in regional and global forums.

8.3 Policy Recommendations for International Organizations

Arctic governance institutions, particularly the Arctic Council, should develop more inclusive frameworks that provide meaningful participatory pathways for non-Arctic ob server states. Creating specialized working groups that leverage the expertise of observer states would allow for more substantive contributions to policy discussions. Furthermor e, establishing platforms for knowledge sharing—such as joint research initiatives or dig ital repositories focusing on climate adaptation and sustainable resource management—would foster mutual understanding. Enhancing transparency and increasing opportunitie s for observer states to contribute to policies with global implications (e.g., climate chan ge and shipping regulations) are essential steps toward building broader legitimacy in Ar ctic governance.

8.4 Policy Recommendations for Other Emerging Economies

Emerging economies seeking Arctic engagement should prioritize developing niche expertise that aligns with their national strengths (e.g., shipbuilding, climate modeling, o r green energy). This specialization enhances their value as partners in Arctic affairs. Ad ditionally, building flexible coalitions with other non-Arctic states sharing similar concer

ns—such as climate change impacts or sustainable resource access—can enhance collect ive bargaining power in governance forums. Crucially, these states must invest in long-te rm strategies that transcend immediate resource extraction, incorporating sustained com mitments to scientific research, environmental protection, and cultural exchanges to buil d enduring credibility.

8.5 Limitations of the Study

While this study provides a comprehensive analysis of Vietnam's Arctic strategy, se veral limitations must be acknowledged. Methodologically, the research relies primarily on qualitative case study analysis and secondary data; the lack of primary quantitative da ta or internal governmental policy drafts limits the statistical measurement of sensitivity and vulnerability. Theoretically, while CIT effectively explains transnational cooperation, its explanatory power may be constrained when addressing extreme scenarios of de-glob alization—such as severe economic sanctions or military confrontations—which occasio nally overshadow interdependent cooperation. Finally, regarding generalizability, Vietna m presents a unique case due to its specific geographic vulnerabilities (e.g., the Mekong Delta) and historical strategic ties with Russia. Therefore, the strategic models identified here may not be universally applicable to other non-Arctic emerging economies with diff erent geopolitical alignments and economic structures.

8.6 Future Research Directions

Future research should investigate the long-term impacts of Vietnam's evolving Arc tic strategy on global governance structures, potentially utilizing scenario planning to pro ject how increased engagement by non-Arctic states might reshape regional mechanisms. Conducting deeper comparative analyses of Southeast Asian countries' Arctic engageme nts could reveal regional patterns and opportunities for collective ASEAN action. Furthe rmore, incorporating quantitative data and multi-case comparisons would validate the br oader applicability of CIT in polar policy research. Developing specialized indices to me asure sensitivity, vulnerability, and asymmetry across different non-Arctic states could yi eld valuable comparative insights. Finally, additional studies should assess the specific i mpacts of technological decoupling on Arctic geopolitics, explore explicit linkages betw

een Arctic environmental changes and Southeast Asian climate impacts, and evaluate the economic implications of new Arctic shipping routes on Vietnam's maritime economy.

Data availability All data supporting the findings of this study are available within the paper and its references. No new primary quantitative datasets were generated or analyzed during this qualitative study.

Funding This research was funded by the National Social Science Foundation of China (Grant No. 20CGJ011).

Competing interests The authors declare no competing interests.

Ethical approval This article does not contain any studies with human or animal participants performed by any of the authors. Therefore, ethical approval was not required.

Informed consent Not applicable. This study does not involve human participants.

Reference

1. Gautier, D.L., Bird, K.J., Charpentier, R.R., et al. (2009) 'Assessment of undiscovered oil and ga s in the Arctic', *Science*, 324(5931), 1175-1179.

2. Lavengood, Z. (2021) 'The evolving Arctic in the world-system', *Journal of World-Systems Rese arch*, 27(2), 468-493

3. Aikman, I. (2025) 'Trump says he believes US will "get Greenland"', BBC, [Accessed 26 Januar y 2025], Available at: https://www.bbc.com/news/articles/crkezj07rzro

4. Hansen, F.S. (2025) 'Russian military thinking about the Baltic Sea and the Arctic', DIIS, [Acces sed 20 February 2025], Available at: https://www.diis.dk/en/research/russian-military-thinking-abo ut-the-baltic-sea-and-the-arctic

5. Krasnozhenova, E.E., Kulik, S.V. and Chistalyova, T. (2021) 'How do Southeast Asian countries participate in the development of the Arctic', *in IOP Conference Series: Earth and Environmental Science*, Bristol: IOP Publishing, pp. 012009.

6. Mitrany, D. (1948) 'The functional approach to world organization', *International Affairs*, 24(3), 350-363.

7. Haas, E.B. (1958) 'The challenge of regionalism', *International Organization*, 12(4), 440-458.

8. Cable, V. (1995) 'The diminished nation-state: A study in the loss of economic power', *Daedalus*, 124(2), 23-53.

9. Keohane, R.O. and Nye Jr, J.S. (1987) 'Power and interdependence revisited', *International Org anization*, 41(4), 725-753.
10. Rogerson, K.S. (2000) 'Information Interdependence: Keohane and Nye's complex interdepend ence in the information age', *Information, Communication & Society*, 3(3), 415-436.
11. Oatley, T. (2019) 'Toward a political economy of complex interdependence', *European Journal of International Relations*, 25(4), 957-978.
12. Forman, S. and Segaar, D. (2006) 'New coalitions for global governance: the changing dynami cs of multilateralism', *Global Governance*, 12, 205-225.
13. Holmes, G. and Cavanagh, C.J. (2016) 'A review of the social impacts of neoliberal conservati on: Formations, inequalities, contestations', *Geoforum*, 75, 199-209.
14. Witt, M.A. (2019) 'De-globalization: Theories, predictions, and opportunities for international business research', *Journal of International Business Studies*, 50(7), 1053-1077.
15. Rogerson, K.S. (2000) 'Information Interdependence: Keohane and Nye's complex interdepend ence in the information age', *Information, Communication & Society*, 3(3), 415-436.
16. Ng, A.K.Y., Andrews, J., Babb, D., et al. (2018) 'Implications of climate change for shipping: O pening the Arctic seas', *Wiley Interdisciplinary Reviews: Climate Change*, 9(2), e507.
17. Son, H.N., Kingsbury, A., Dang, C.N., et al. (2023) 'Social Vulnerability, Climate Change, and Ethnic Minority Communities in the Northern Mountainous Region of Vietnam', *The International Journal of Climate Change: Impacts and Responses*, 16(1), 21-40.
18. Watson, I. (2014) 'Middle Power Alliances and the Arctic: Assessing Korea-UK Pragmatic Idea lism', *Korea Observer*, 45(2), 279-307.
19. Hale, T., Held, D. and Young, K. (2013) 'Gridlock: From self-reinforcing interdependence to se cond-order cooperation problems', *Global Policy*, 4(3), 223-235.
20. Frémont, A. (2021) 'Is deglobalization a threat to maritime transport?', *Futuribles*, 445(6), 63-8 6.
21. Morse, J.C. and Keohane, R.O. (2014) 'Contested multilateralism', *The Review of International Organizations*, 9, 385-412.
22. Zhao, S.X.B. and Gong, Z. (2021) 'post-pandemic de-globalization? Analysis of likely changes in global supply chains', *COVID-19 Pandemic, Crisis Responses and the Changing World: Perspe ctives in Humanities and Social Sciences*, pp. 39-56.
23. Golomidova, P.S. (1998) 'Prospects for the development of Russian higher education exports to the Socialist Republic of Vietnam: the experience of Northern (Arctic) Federal University', *Вестн ик*, 7(1), 72.

24. Adger, N., Kelly, M. and Granich, S. (1996) 'The role of natural resource management in mitig ating climate impacts: mangrove restoration in Vietnam', *CSERGE GEC Working Paper*.
25. Østreng, W. (1999) 'Danish Security Policy: The Role of the Arctic, the Environment and Arcti c Navigation', in *National Security and International Environmental Cooperation in the Arctic—th e Case of the Northern Sea Route*, Dordrecht: Springer, pp. 205-237.
26. RIA Novosti (2023) 'Russia and Vietnam to conduct research at Arctic research stations', *Arctic Russia*, [Accessed 20 February 2025], Available at: https://arctic-russia.ru/en/news/russia-and-viet nam-to-conduct-research-at-arctic-research-stations/
27. Bui, T.H. (2022) 'Vietnamese-Russian cooperation in exploration and production of oil and gas from 1980 to the present', *Dalat University Journal of Science*, pp. 123-136.
28. Ibid.
29. Ingimundarson, V. (2024) 'The Background: Iceland's Role in the Arctic', in *Iceland's Arctic Po licies and Shifting Geopolitics: Embellished Promise*, Cham: Springer, pp. 21-65.
30. Kraska, J. (2011) 'The new Arctic geography and US strategy', *Arctic Security in an Age of Cli mate Change*, pp. 244-266.
31. Gunnarsson, E. (2020) 'An Icelandic Perspective on Arctic Marine Cooperation', *The Arctic in World Affairs: A North Pacific Dialogue on Will Great Power Politics Threaten Arctic Sustainabili ty*, pp. 256-270.
32. Zimmer, A., Jakob, M. and Steckel, J.C. (2015) 'What motivates Vietnam to strive for a low-ca rbon economy? —On the drivers of climate policy in a developing country', *Energy for Sustainabl e Development*, 24, 19-32.
33. Nord, D.C. (2010) 'The shape of the table, the shape of the Arctic', *International Journal*, 65(4), 825-836.
34. Bhagwat, J. (2025) 'India and the Non-Arctic Asian Observer States', in *Evolution of India's Po lar Policies*, Cham: Springer, pp. 153-196.
35. Pelyasov, A.N., Galtseva, N.V. and Atamanova, E.A. (2017) 'Economy of the Arctic "Islands": the case of nenets and Chukotka autonomous Okrugs', *Ekonomika Regiona= Economy of Regions*, 1, 114-125.
36. TASS (2023) 'Russian emergencies minister invites Vietnam to take part in Arctic drills in 2025 ', [Accessed 20 February 2025], Available at: https://tass.com/politics/1703687
37. Wheelersburg, R.P. (2022) *The Security of Iceland and the Arctic 2030*, Cham: Springer.
38. Lackenbauer, W. and Huebert, R. (2014) 'Premier Partners: Canada, the United States and Arcti c Security', *Canadian Foreign Policy Journal*, 20(3), 320-333.

39. Oanh, V.T. and Thao, T.T.P. (2023) 'The ASEAN–Canada Free Trade Agreement and its impacts on Vietnamese economy', *International Journal of All Research Writings*, 4(8), 109-114.
40. Pareek, N. (2024) 'Unravelling Challenges in the Arctic and India's Response Strategy', in *India in the Arctic: Geopolitical and Economic Engagements*, Singapore: Springer, pp. 199-300.