Innovations

Strategic Interests in the Arctic: A Comparative Analysis of China and India

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Abstract : *The Arctic region can be described as the southernmost latitude in the Arctic Circle in the northern hemisphere, consisting of eight Arctic states.Once a frozen frontier, it is now a gateway to global geopolitics and resource exploitation due to its changing effects of climate change due to the melting of polar ice cap. The world now looks upon it as an opportunity to assert its dominance over the region through establishing trade routes i.e. the northern sea route which aims to connect Europe and Asia to enhance trade with cost-effective shipping services instead of goods Mediterranean passing through the traditional Indian Ocean – Suez canal route passing through the sea. Until the 1990s, the US and European powers had established their rights over the Arctic resources which were governed by the Arctic Council formed in 1996. Officially, Asia's involvement began in 2013 with observer status in the Arctic Council. This paper aims to analyze the growing influence of China and India's contrasting approaches to mark their presence in the Arctic region. It also examines their interests, strategies, and geopolitical tensions involving the regional dynamics between two Asian powers.*

Keywords*: Arctic, Geopolitics, Comparative Analysis, Maritime Trade, China, India, Geostrategy*

1. Introduction

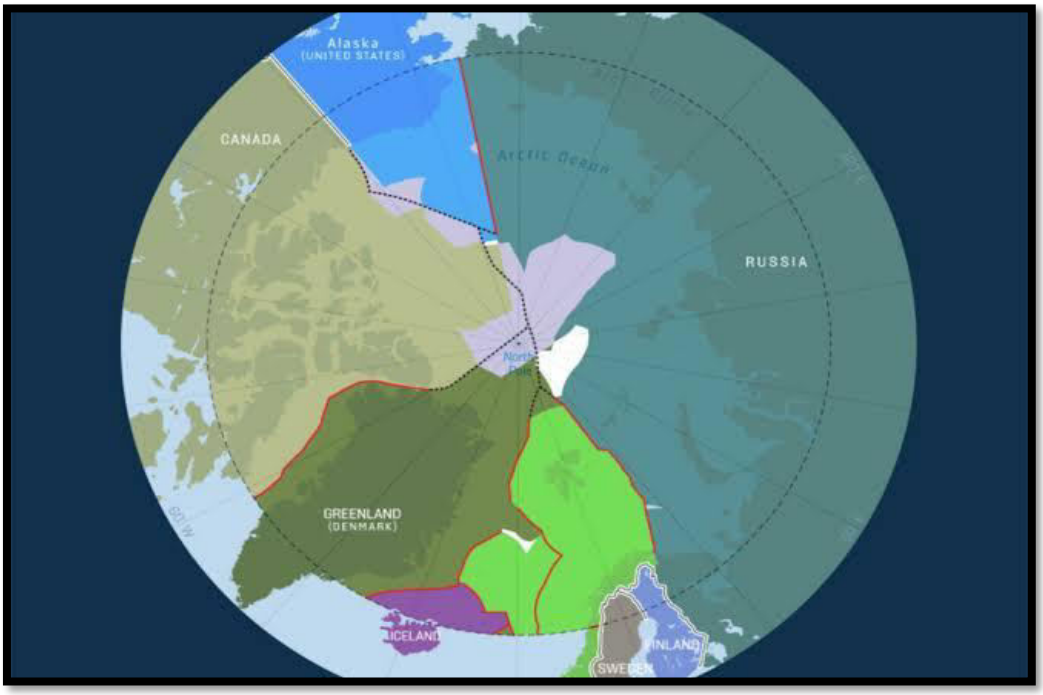
The Arctic region with its maritime domain and untapped resources has become a focal point for major powers including China & India along with Japan, South Korea Singapore, Saudi Arabia, and Afghanistan The Arctic Council is a high-level forum established by eight Arctic States to promote cooperation and interaction among the Arctic States with full consultation and Involvement of the Arctic Indigenous community and other inhabitants. It plays a crucial role in drafting Arctic policy and environmental protection, sustainable development, and good governance in the region.

Asia's engagement is not new in the Arctic as it signed the Svalbard Treaty (BR, 2019)in 1920 despite their geographical distance, have distinct interests in the region. While China wishes to assert its dominance through economic investments and strategic moves, India adopts a more cautious and science-focused approach. China is investing heavily in the Yamal LNG project in Russia after western sanctions due to the ongoing Russia-Ukraine war. (Stronski, 2018) it also undertakes various science expeditions. It has also established a permanent research station named Yellow River Station in Svalbard, Norway. It has an ice breaker named Xue Long-II (Snow Dragon) to navigate scientific and polar expeditions in resource exploration like oil, gas, and essential minerals. In 2018, China released a white paper and highlighted itself as a ‘‘near Arctic-state’’ with economic objectives. It aims to establish diplomatic relations with Russia, Iceland, and Denmark as it is keen on the extraction of hydrocarbons to maintain a stronghold hold as the manufacturing powerhouse of the world which will be exported to European nations through NSR. (White Paper, 2018)

India has emerged as one of the strategic players in the Arctic region alongside China. It also established Himadri, its first research station dedicated in Ny-Alesund, Svalbard in 2008. One of India's objectives in its engagement is due to the relevance between the Himalayas and the Arctic region to monitor arctic floods and coastal waters and to comprehend the effects of climate change and its implications on the Indian monsoon. India needs to initiate research projects in the Arctic as it can provide major clues on climate change and devising future mitigation strategies for the affecting tropical monsoons. India has also planned to build the international north-south transportation corridor, which is to create multi-road railway networks from India to Russia through Iran, Azerbaijan, Central Asia, Russia,, and Europe. It also aims to continue this to the Bering Straits to facilitate trade. India’s Act East policy is a collaboration with countries like Singapore, Japan, and SouthKorea to ensure Asian participation in the region. (Singh et al., 2024) The Ministry of Earth Sciences also released its draft on India's Arctic Policy in 2020. This proposal aims to unravel the complexities between the strategic complexities between two states.

Figure 1

The representation of the Arctic States



Source: Friedman, 2020

Objectives of the Study

a. To outline the geopolitical significance of the Arctic region for Great Powers; i.e., India as well as China.
b. To enumerate on the intergovernmental organization led by the Arctic Council and its role in governing the Arctic region.
c. To elucidate the geostrategic and geoeconomic policies of China and India in the Arctic region.
d. To adumbrate the securitization debate amidst the great power rivalry in the Arctic region.
e. To compare and contrast the economic hegemony of China and India in the Arctic region.

2. Materials & Methods

The paper employs both Qualitative and Quantitative approach with a case study method. This paper attempts to examine the distinct approaches of China and India in the Arctic region. China seeks to establish itself as a polar power through substantial investments, infrastructural development, and diplomatic engagements, which create a power vacuum and prompt global caution. In contrast, India focuses on scientific research and environmental monitoring, emphasizing climate change studies and

establishing Research stations. In the comparative analysis of China and India's Strategic interests in the Arctic, the authors have utilized document analysis and comparative techniques to discern key aspects of their policies. Through the meticulous scrutiny of official documents, policy statements, and white papers, the readers would gain insights into each country's objectives and strategies regarding the Arctic. The comparative approach involved assessing policy goals and regional engagement environmental impact and this enabled us to identify differences in potential areas of conflict between China and India. By examining their commitment to arctic governance, scientific research, and environmental protection. The authors shed light on the evolving dynamics of Arctic geopolitics. The findings underscore the significance of understanding the strategic calculations of both countries as they navigate this increasingly important region.

3. Review of Literature

Doshi et al., (2021) highlighted China's arctic policy as emphasizing the geo-strategic importance of the region, focusing on its vast natural resources and emerging shipping routes. They elucidated China's aim to establish itself as a "polar great power" by 2030 through scientific research, economic investments, and military interests. However, the document lacks an in-depth analysis of the geopolitical significance of the Arctic for India, particularly the impact of China's assertive Arctic policy on India's trade route and economic interests. For potential ramifications like strategic access to the Indian Ocean, an altering bypass congested to Malacca Straits securing efficient pathways for transporting goods and exerting its political influence in the region, the Silk Road Fund hold substantial stakes, ensuring long term access to arctic energy resources through Sino- Russian partnership.

Nanda (2019) the author presents two major arguments on India's Arctic policy, such as those by Ramesh (2018) and Sinha and Gupta (2014), which emphasize scientific research and environmental stewardship, highlights India's potential geostrategic influence in the Arctic. However, the policy underutilized governance opportunities in the Arctic Council and lacked private-sector engagement. There is a gap in understanding India's minimal participation in the Arctic Council working groups and regional forums, calling for a more active policy framework to maximize India's contributions. This paper inadequately addresses India's limited involvement in Arctic governance mechanisms and lacks a strategy for the private sector to fully leverage India's Arctic engagement.

Bracco (2022) this article talks about how Non-Arctic states like China and India are finding new geopolitical opportunities and more stakes in the battle for resources as the Arctic glaciers continue to melt fully. Arctic policy unveiled in 2021, with a special

emphasis on scientific research and strategic cooperation, tempered with an absence of firm diplomatic engagements in the Arctic states, (barring Russia), and an inability to optimally leverage the governance spaces that the Arctic Council Working Groups provide. The paper overlooks the low active presence of India in Arctic governance mechanisms and the lack of a strategy document for private sector engagement with the Arctic, both necessary to flesh out Indian Arctic engagement fully.

4. Discussion

India and China have navigated the Arctic landscape and this engagement is driven by certain factors such as strategic military interests, economic opportunities, environmental concerns, and the pursuit of scientific research and global influence.

5.1 China's Geopolitical ambitions in the Arctic region

China plays a significant role in world politics as one of the world's most populous countries and the second-largest economy.It advocates for a multipolar world with its increasing involvement in international Institutions. China has been expanding its Global reach through the initiative like Belt and Road initiative which aims to enhance regional connectivity and embrace of brighter economic future through infrastructure investment the country is also involved in various territorial disputes and has a complex relationship with major powers like India with issues ranging from trade to security concerns as China continues to grow economically and military rally its strategies and policies are closely watched by the international community reflecting its significant impact on the global geopolitics. (Myers, 2019)China's approach to diplomacy often termed as "Wolf Warrior Diplomacy," where the country is also making strides in technology space exploration, and military modernization and further qualifying its status as a key player in 21st-century geopolitics. (Bommakanti, 2024)

The Arctic region is emerging as a strategic frontier with China leveraging its influence, potentially reshaping the contours of global power. By investing in Arctic research, infrastructure, and resource development, China is positioning itself as a key player in the high North. This engagement in the Arctic could catalyze China to assert its dominance on the world stage, signaling a shift in the geopolitical dynamics that may redefine international relations in the coming decades.China released its White Paper in 2018 and states highlighting its focus on understanding, protecting, developing, and participating in the Arctic governance to promote sustainable development and safeguard common interests it aims to enhance scientific research, respond to climate change improve technology, and contribute to the economic development while respecting environmental protection and the Indigenous cultures participation in the arctic is mainly guided by principles of respect, cooperation, win-win results, and sustainability, emphasizing adherence to the International Law with shared mutual

benefits and sustainable development. China actively engages in Arctic governance supporting the peaceful utilization of the Arctic and promoting Cooperation with the Arctic and non- Arctic States.

5.2 Security and Military Strategies of China

There is an evident gap between China's stated policies and its actions. While China positions itself as a country that respects International laws, there may be instances where its actions do not align with its stated commitments. China's interest in the region is driven by these economic opportunities which are considered crucial for its long-term development and security. China envisions itself as a "Polar Great Power by 2030" and has been emphasized by Top Chinese officials included in several 5-year plans, this ambition is Central to China's Arctic strategy but it is deliberately omitted from foreign-facing documents to avoid alarming other arctic states. China also views the Arctic as a new strategic frontier that is important to enter spaces like the deep sea, outer space, and cyberspace. This includes maintaining the capability to defend and project power in the Arctic. (Jinping, 2021) Below are some of the Chinese security and military strategies. Since 2014 China has been increasingly focused on building its capacity to defend its interests in the Arctic through military means. This shift is very evident in various official planning documents by the Chinese security stakeholders. Among them are the five-year plans. The 12th FYP in 2011 was the polar region that were first mentioned in the 12th FYP, where the Arctic was connected to broader teams of maritime management, security, and resource exploration.The 13th FYP in 2016 was the plan expanded on the Arctic strategy directing greater government resources to build new icebreakers, contribute to International Research and actively participate in formulating international rules in the polar regions. (Siddiqui, 2018)

The "National Security Law of 2015" explicitly references the exploration of the Arctic making one of the earliest mentions of the Arctic in a security context by the Chinese government article 32 emphasizes China's rights to exploration and use of the Arctic under the State Oceanic Administration (SOA) .The People's Republic of China army's priority is knowledge accumulation and capacity building for Arctic navigation and monitoring, navigation, and satellite technology, which aims to research from the PLA and civilian stakeholders focused on Arctic navigation and satellite surveillance. Thisincludesa 2015 article on ship maneuverability in the Arctic with joint research on ice levels in ship navigation feasibility.Arctic naval capabilities have reportedly been building Arctic navigation since these research projects.This includes investment in high and acute, such as planned nuclear-powered eyes breaker by the state-owned China General Nuclear power group.Some of the strategic implications would be firstly, the military presence where the PLA is researching indicates a strategic interest India updates during it as a political arena of a great power competition over trade rules and

resources, the potential of the Arctic to become a new cold war zone suggesting a need for China to secure interest militarily. Secondly, the great power competition among Arctic countries for control over trade rules and resources identifies this competition as a challenge to China's development in the utilization of the Arctic (Yilmaz, 2017)

5.3 Economic pursuit of China in the Polar Domain

China's economic interests in the Arctic region are multifaceted and growing. They are primarily driven by the potential for new shipping routes as Arctic ice melts, which could shorten China's trade routes to Europe. The Arctic holds substantial oil and gas reserves with an estimated 240 billion barrels of oil andequivalent natural gas. increased accessibility due to melting ice could boost extraction activities. The region is rich in minerals like lead, zinc, gold, rare earth elements, diamonds, iron, and nickel. Increased physical access could facilitate extraction, but the infrastructure costs are significant. Warmer waters are attracting Southern fish species northward, potentially boosting commercial activities. Apart from these, the melting ice extends the tourism season and opens new areas for exploration, driving growth in Arctic tourism. However, high transaction costs and navigation risks remain. (CNA, 2022)

China uses foreign direct investment as a strategic tool to advance its interest in the Arctic, including securing natural resource rights, establishing a presence, and developing shipping routes. PRC-based entities use foreign direct investments, joint ventures, and production-sharing contracts to acquire stakes in Arctic research projects Examples include zinc, oil, LNG, and rare Earth. Chinese state-owned companies undertake high-risk and expensive Arctic projects due to state backing, which provides a competitive advantage over firms driven solely by market incentives.

Out of 22 major resource projects 13 involved foreign direct investment however, the success rate has been mixed with some projects blocked, stalled, or going bankrupt. Developing infrastructure is critical for supporting shipping routes such as the northern sea route enhancing China's logistical and strategic capabilities in the region. The below table explains China's entities involved in natural resource extraction. (CNA, 2022)

Table 1

Chinese investment patterns and projects

Project	PRC-based entity	Type	Resource type	Location	Amount	Status	Year
Yukon Zinc[189]	Jinduicheng	FDI	Zinc	Yukon, Canada	Unknown	Ongoing (bankrupt)	2008
Canadian Royalties[190]	Jilin Jien Nickel	FDI	Nickel	Nunavik, Canada	$800 million	Ongoing	2009
Red Dog Mine[191]	China Investment Corporation	FDI	Zinc	Alaska, US	17.1% (since decreased)	Ongoing	2009
Lac Otelnuk iron mine[192]	Wuhan Iron and Streel	Joint venture	Iron	Labrador Trough, Canada	$121 million	Ongoing (defaulted in 2019)	2011
Roseneft[193]	CNPC	PSC	Oil	Barents and Pechora Seas, Russia	Unknown	Stalled	2013
Yamal LNG[194]	CNPC	FDI	LNG	Yamal Peninsula, Russia	20%	Ongoing	2013
Ironbark Zinc[195]	China Nonferrous Mining Corporation	MOU	Zinc and lead	Citronen Fjord, Greenland	Up to 20%	Unknown	2013
Nexen (North Sea)	CNOOC	FDI	Oil	North Sea, UK	$15.1 billion	Ongoing	2013
Eykon Energy[196]	CNOOC	PSC	Oil	Dreki, Iceland	Unknown	Cancelled	2014
Isua iron ore field[197]	General Nice Group	FDI	Iron	Qeqqata, Greenland	$2 billion	Ongoing	2015
Greenland Minerals[198]	Shenghe Resources	FDI	Rare earths and uranium	Kvanefjeld, Greenland	12.50%	Stalled	2016
Yamal LNG[199]	China Silk Road	FDI	LNG	Yamal Peninsula, Russia	$1.2 billion (9.9%)	Ongoing	2016

Source: CNA, 2022

Note: Production-sharing contract (PSC) Green = ongoing or successful; Yellow = ongoing but has gone bankrupt, defaulted, or ended up in arbitration; Red = blocked by the host country, canceled, or otherwise stalled

China's strategic use of FDI underscores its long-term goal of securing essential resources and establishing a presence in the region. this approach is aligned with Beijing's broader Geopolitical strategy to enhance security, diversify resource supplies, and expand influence in global governance structures including the Arctic Council. Despite some of the setbacks, China's persistent investment effort highlighted its commitment to Arctic development fully stopping the state-owned enterprises' financial backing, enabling China to absorb the high associated with the Arctic projects positioning favorably against competitors constrained by market-driven dynamics. The infrastructure environment facilitates resource extraction and helps China develop critical shipping routes, potentially reducing transit times and costs for global trade. This could significantly impact Global shipping patterns and economic dynamics as depicted in the following table: (CNA, 2022)

5. Results

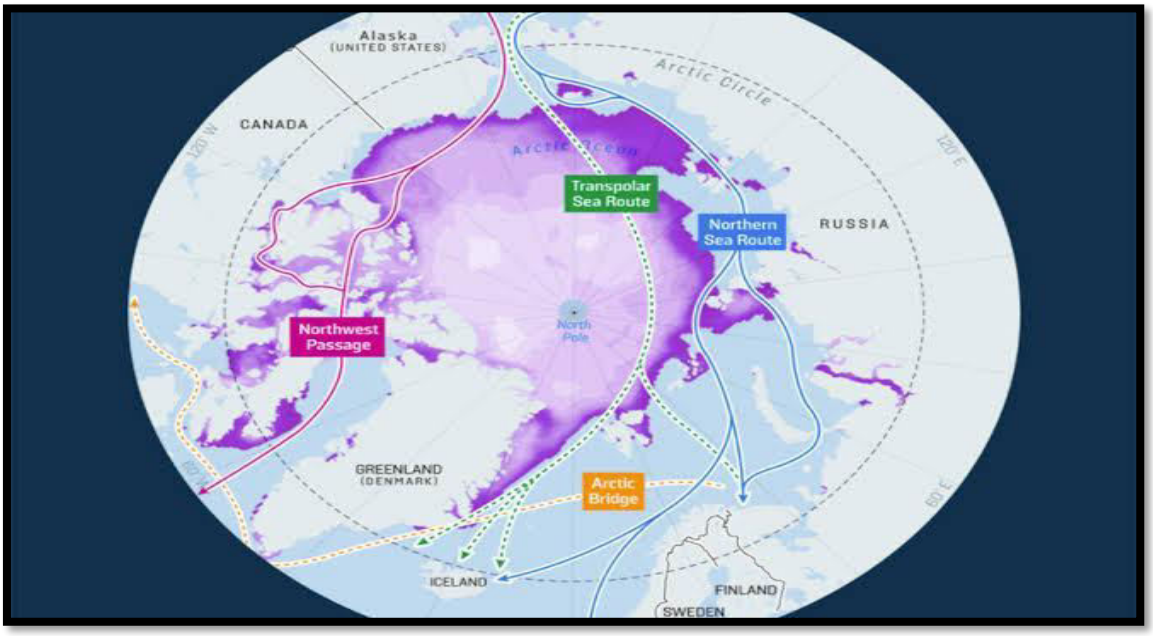
This research finding, it is indicative that India‘s Arctic engagement is a delicate balancing act. It seeks to avoid confrontation with China, asserting its presence through scientific contributions and adherence to international law, mitigating the possible geopolitical risks. While China aims to establish itself as a key player in the Arctic, leveraging its ambitions to dominate the region.

6.1 An analysis of China’s Arctic Policy through the Northern Sea Route

The polar Silk Route is an extension of China's Belt and Road initiative creating new Maritime routes through the Arctic Ocean. It involves developing shipping lanes and infrastructure to facilitate trade and resource extraction in the Arctic region. This initiative aligns with China's strategy to enhance its connectivity and influence in the Global trade networks. The Northern Sea Route is a shipping Lane that runs along the northern coast of Russia connecting the Atlantic and Pacific Oceans. It is a part of the polar Silk Road and is primarily seen as the Eastern passage as opposed to the North Western passage, which would be the Western route across the Arctic via the Canadian Arctic archipelago. China aims to focus mainly on the Siberian coast, which is part of the polar Silk Road. The northern sea route is expected to be ice-free by 2050. This route offers faster and cheaper shipping between Asia and Europe. A trip from Dalian, China, to Rotterdam, Netherlands, via the northern sea route takes about 33 days compared to 48 days via the Suez Canal. China's strategic involvement has its economic and strategic motives because the NSR offers a significant reduction in travel time and fuel costs full stop reducing Reliance on traditional routes like the Suez Canal and the Straits of Malacca mitigates risks such as congestion, piracy, and Geopolitical tensions with its neighboring countries like India, Philippines, Malaysia and other Southeast Asian countries. (Brady, 2017)

Figure 2

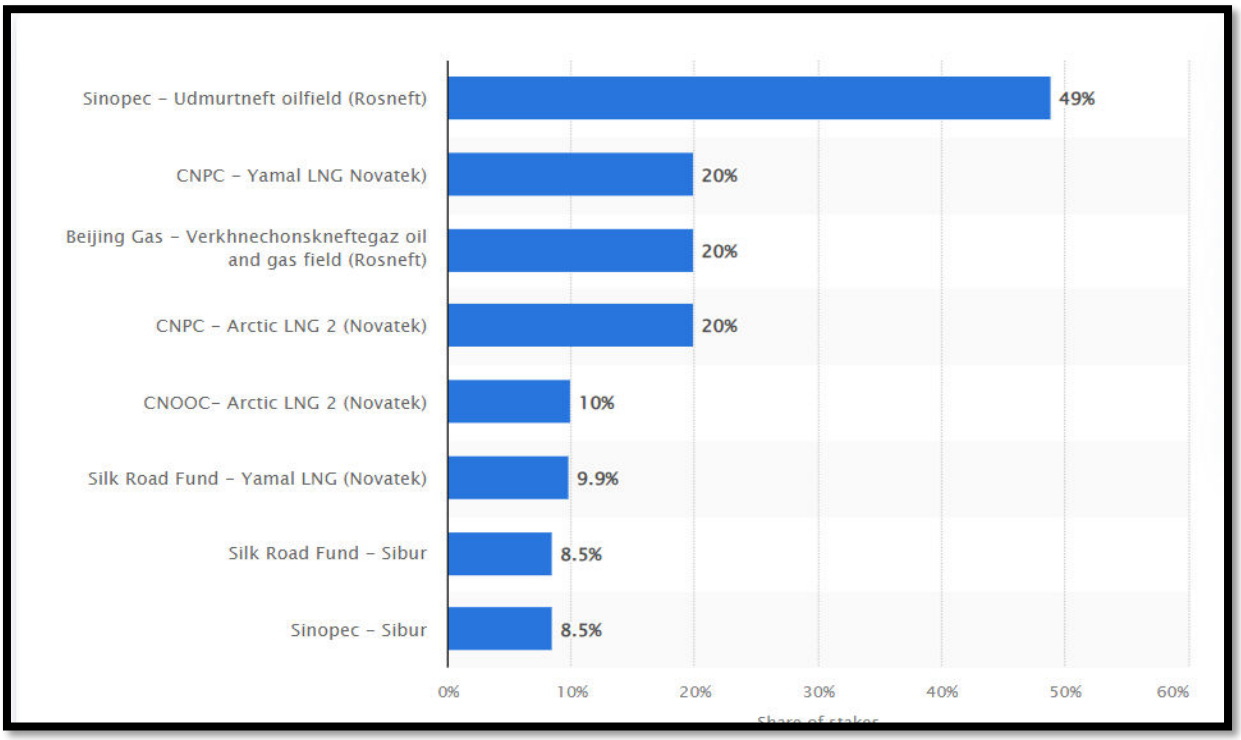
Northern Sea Route Passage



Source: Friedman, 2020

China has also collaborated with Russia in developing infrastructure to support the northern sea route logistics. Aur 10,500 km fiber optic cable along the Arctic Circle was laid to improve connectivity and navigation safety with Huawei involved in the infrastructure. (Martins, 2023). A total of $ 27 billion Arctic LNG project involving Russia's NovaTek, France's Total SA, and China's CNPC launched in 2017 exemplifies China-Russia Energy Corporation under the BRI. (Anonymous, 2018) China is building docks in key Russian Arctic ports and enhancing data slash communication infrastructure filling gaps left by Western sanctions on Russia. China is also rapidly developing its own IceBreakers, one of them being Xuelong - II, while Russia struggles due to budget sanctions and corruption issues. (Salim, 2023) In the wake of the Russia-Ukraine war, China has the leverage to invest in Russian infrastructural projects due to sanctions imposed by Western countries on Russia . one of them being, a deep-water port project in Arkhangelsk city of Russia (50 km south of Arctic) Port Divina plays a key role in organizing navigation via the northeast passage. However, the partnership tilts the balance of power (Filimonova, 2018)

Figure 3:



Source: Statista Research Department, 2023

Note: The graph represents the share of Chinese investor stake in Russian energy companies and infrastructure projects as of April 2023

China also faces some legal challenges and balancing acts where China's legal stands on the Arctic, others to mainstream interpretations of UNCLOS (United Nations Convention on the Law of the Sea, n.d.) advocating for freedom of navigation and resource exploitation. However, this contrasts with its interpretation of international law in the South China Sea creating potential legal inconsistency. Balancing its little claims in the Arctic with those in the regional water is crucial for China to maintain its strategic interest in avoiding conflicts with other major powers.(Havnes et al., 2019)

6.2 Ananalysis of India's Arctic Policy

India's relationship with the Arctic region dates back to February 1920, when it signed the Svalbard Treaty in Paris. This marks the beginning of India's involvement in the Arctic region, which has evolved significantly over the years, particularly through scientific research and international cooperation. India's Arctic engagement is characterized by a blend of scientific exploration, economic interest & Geopolitical strategy. India's formal entry into Arctic research began in 2007 with the launch of its first scientific expedition aimed at studying Arctic microbiology, atmospheric Sciences, and

geology. This initiative laid the ground for more substantial involvement in 2008. India established its first Research Station that is Himadri in Ny-Alesund, Svalbard, making it one of the few developing nations to have a research base in the Arctic. This commitment to arctic research was solidified in 2014 with the deployment of India's first multi-sensor moored observatory, IndArc, in Kongsfjorden, Svalbard. The establishment of India's northernmost atmospheric laboratory in Gurvebadet in 2016 marked another milestone in India's Arctic research initiatives. (Singh et al., 2024)

India's Arctic research has focused on various critical areas, including the study of Arctic glaciers to compare their mass balance with that of the Himalayan glaciers. This comparative study is crucial for understanding the broader impacts of Climate Change on both polar and mountain regions. India's participation in the Arctic region is part of a broader polar program that includes activities in the Arctic, Antarctic, and the Himalayas, emphasizing The interconnected nature of global climate systems. India is also a member of the NY-alesund Science Manager's Committee (NySMAC) and the International Arctic Science Committee(IASC). These members facilitate collaboration and integration of Indian Research efforts with international initiatives enhancing the scope and impact of India's Arctic research.(Quillérou, 2017) In 2013 India along with China, Japan, South Korea, and Singapore was granted observed status in the Arctic Council. This status has enabled India to participate actively in the councils, working groups, and projects focusing on climate, biodiversity, and sustainable development. Additionally, the University of Arctic welcomed Indian students in 2019, providing opportunities for academic and Research collaboration in Arctic studies. (Singh et al., 2024)

India's polar policy has gained substantial importance because of the notification of its Arctic policy and the passing of the Antarctic law by the Indian parliament. Although the Arctic may seem distant to many South Asian countries, the region has a significant impact on them through climate change and energy dynamics. Among the South Asian nations India's commitment to polar affairs is underscored by both its Arctic policy and the Antarctic law, indicating its proactive stands in these regions. India positions itself as a third-pole country, with the Himalayas representing one of the world's most sensitive climate zones. India's interest in the Arctic is significantly driven by scientific engagement and collaboration. The policy emphasizes climate and environmental protection, economic and Human Development, transportation and connectivity, international cooperation, and national capacity building. This comprehensive strategy involved partnerships with research communities, business sectors, and industries. The Arctic strategy aims to coordinate India's policy-making on the implications of Arctic ice melt for its economic, military, and strategic interest, particularly regarding Global shipping routes, energy security, and mineral wealth

exploitation, climate change's impact on Agro-climatic conditions is critical for India's whose food security is heavily dependent on the ecosystem stabilities. The Arctic region's governance is complex involving multiple National and International regulations. India's observer status in the Council underscores its concern over the Council's activities being affected by geopolitical tensions such as those arising from the Ukraine conflict. India has strategic partnerships with Russia, notable in Energy cooperation and joint development of Hydrocarbons in the Arctic. The 2019 MoU between NITI Ayog and the Ministry of Development of the Russian Far East and Arctic highlights India's commitment to energy collaboration with Russia. These partnerships are crucial, particularly as India navigates the implications of Western sanctions on Russia.

India's Arctic policy also emphasizes transportation and connectivity. With a significant share of the global workforce, India aims to contribute to Arctic Maritime activities. The Arctic policies support exploring the connectivity corridor between the Arctic and the International North-South Transport Corridor linked with NSR. The proposed Chennai-Vladivostok Maritime corridor is expected to facilitate the Import of Russian oil and natural resources, enhancing India-Russia trade relations. The policies stress the importance of multilateralism and rule-based governance in the Arctic, recognizing the challenges posed by Geopolitical complexities.

China's increasing activities in the Arctic pose significant implications for India. India views China as a competitor in the Arctic, particularly given China's self-designation as a neurotic state and its development of the Polar Silk Road. India's apprehension about the Belt and Road initiative and the String of Pearl strategy reflects broader strategic concerns. (Havnes, 2019) India acknowledges the necessity of engaging both Russia and China in Arctic affairs. India's partnership with Russia is pivotal in its Arctic engagement, offering vast opportunities for scientific and commercial interests. This partnership is essential as India navigates its relations with Western Arctic stakeholders and prepares to host the Shanghai Cooperation Organization(SCO), positioning itself in complex geopolitical dynamics in the current scenario. India's after-policy underscores its scientific economic and geopolitical interest in the region. As a significant player in polar affairs India's proactive engagement in the Arctic is a true shell for its broader Global aspirations and regional stability and to counter China's dominance in the region. (India's Arctic Policy Regime and Its Geopolitical Significance, 2022).

India recognizes the Arctic is a critical region for understanding Global climate systems. The policy stresses the importance of studying climate change impacts, ice melting rates, and their implications for global weather patterns and sea levels. This is

coupled with commitments to sustainable development that benefit the local community and permanent residents of the Arctic, preserving the fragile Arctic environment. India aims to balance economic interests with environmental stewardship, promoting responsible exploitation of Arctic resources. India is interested in Arctic shipping routes, particularly the northern sea route or the Northwestern Passage, which can significantly reduce travel time for global trade and enhancing connectivity between the Arctic and Indian Ocean region is seen as a strategic move to bolster trade and economic ties with Europe and the rest of the world. India's policy underscores the importance of Governance and international cooperation through engaging with international forums like the Arctic Council, where it holds observer status. It also advocates for the Arctic region to be a part of the Global Commons so that the non-Arctic States can make use of this opportunity to facilitate trade and ensure development for all. (Ministry of Earth Sciences, 2020)

6. Conclusion and Recommendations

China plans to assert its influence in the Arctic through the polar Silk Road using some key investments which has significant implications for India and the rest of the world. The PSR encompasses the Northeast Passage (NEP), the Northwest Passage (NWP), and the Transpolar Sea Route (TSR). By investing in these roots, China aims to reduce shipping times between East Asia and Europe, enhancing its control over Global Maritime trade.

China is also exploring investments in Kirkenes Deepwater Port in Norway, which would serve as a key logistics hub for Arctic shipping routes. Icelandic ports, which are one of the important investments of China in Iceland such as the proposed Finnafjordur port project, strive to create a Transshipment hub for Arctic routes. Additionally, Chinese companies have invested in Greenland mining projects, focusing on rare Earth elements which are essential to high-tech Industries developing in China.(Tüter, 2022)

Table 2

China's investment projects in the Arcticregion

Project name	Location	Type of investment	Strategic importance
Yamal LNG	Russia	Energy (LNG)	Secures energy supply, strengthens Sino- Russian ties
Kirkenes deep water port	Norway	Infrastructure (port)	Key logistics hub for shipping routes
Finnafjordur port	Iceland	Infrastructure (port)	Transshipment hub for Arctic routes
Yellow river station	Svalbard	Research (scientific station)	Enhances environmental monitoring and scientific research
China remote sensing satellite North Polar station	Sweden	Technology (satellite station)	Advances in climate research and surveillance

Source: Tüter, 2022

China's increasing presence and influence in the Arctic have significant implications for India, both economically and geopolitically. The Arctic region, rich in resources and strategic routes, has become a focal point for global powers, and China's ambitions have direct and indirect consequences for India.The Arctic region is estimated to hold about 13% of the world's undiscovered oil and 30% of its undiscovered natural gas. This increases its importance for the Nations, particularly China's investments in energy projects to secure long-term energy supplies for itself, potentially limiting India's access to the resources. This could lead to increased competition and higher prices for India in the Global energy markets (US Energy Information Administration, 2012). The Yamal LNG project is situated in a mall peninsula of Russia with a capacity of 16.5 million tons of LNG per year, and the stakeholders are Novotek with 50.1% followed by Total SA and CNPC with 20%,the Silk Road Fund with 9.9%, and China is the second biggest stakeholder. China is also the largest importer of Russian crude oil at 1.6 million barrels per day. Long-term contracts from LNG ensure China has a consistent supply of natural gas, which is crucial for its Industrial and residential energy needs, reducing dependency on unstable Middle Eastern markets in sea routes prone to Geopolitical

tensions. This could lead to a negative economic impact on India, creating pressure on global LNG prices due to increased competition. India might find it challenging to secure long-term contracts as suppliers prioritize large consumers like China. (IEA, 2022)

This possible establishment would divert important Maritime traffic in the straits of Malacca which will impact the Global shipping pattern. India's Major ports like Mumbai, Chennai, and Visakhapatnam, which currently benefit from traffic between Europe and Asia, will reduce in throughput if trade shifts to the northern sea route. India could reduce demand in shipping and Logistics affecting the people's employment and economic opportunities and increase competition in the Indian Ocean region as well. China has its military and commercial presence in IOR like the Naval base in Djibouti and Gwadar Port in Pakistan under the CPEC corridor, Hambantota in Sri Lanka, and Kyaukpyu in Myanmar. But to counter China's influence, India has been strengthening its capabilities and presence in the Indian Ocean region with projects like INS Vikrant and developing its own teaching ports like the Chabahar port in Iran to establish alternative trade rules and enhance Trade connections with Central Asia, bypassing Pakistan.

Economically, the NSR hauled some of the earlier volume of trade away from key Indian maritime port revenues. This transition may also reduce demand for related services, resulting in losses of employment and infrastructure investment in maritime. China's new and improved Arctic prowess could harmonize with its geo-strategically in the Indian Ocean, leading to competition with India's strategic predominance and security apprehensions. India must take strong strategic approaches to counter China's dominance in the Arctic to thrive as one of the world's fastest-growing economies and major Asian powers. (Anthony, Ian, et. al, 2021)While Chinahas intensified its projects in the Arctic today, these dynamics could be tested if their interests are not mutually reinforcing. In analogy, China is a competitor for India and will sometimes represent a threat to Indian autonomy and strategic interests in the Arctic. Hence India needs to keep China at bay through its effective policies for gaining leverage in the Arctic region.

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