Journal of Global Social Sciences **June 2024, Volume 5, Number 18, 39-54**
ISSN: Print 2735-9328, Online 2735-9336

THE COMPETITION BETWEEN THE UNITED STATES AND CHINA IN THE EMERGING TECHNOLOGIES AND ITS IMPLICATIONS ON THE ASSOCIATED NATIONAL SECURITY

Yesmin Abubakar GAWI,

(PhD Student) Department of Political Science and International Relations, Nile University of Nigeria, Abuja

&

Abdulkarim ABDULLAHI,

Department of Political Science and International Relations, Nile University of Nigeria, Abuja,

abdul.abdulkarim@nileuniversity.edu.ng

Abstract

National security is affected by the competition between the United States and China in emerging technologies. In emerging technologies such as artificial intelligence, 5G telecommunications, and cybersecurity, the stakes are high for both countries. It is imperative that these technologies advance in order to remain competitive economically, maintain military superiority, and ensure national security as a whole. There are potential implications for other nations and international alliances from the rivalry between the United States and China in these areas. Moreover, the outcome of this competition may influence future technological norms and standards, affecting global markets and innovations. To navigate the complex interplay between technology, national security, and global influence, policymakers, businesses, and stakeholders must understand the dynamics of this competition. Adopting a qualitative approach to the study of international relations, the paper adopts a theory of balance of power to the study of international relations, which the idea is to keep things steady and discourage large conflicts from developing. The paper concludes that in order to make sure that cutting-edge technologies are generated and utilized in an ethical and open manner, constructive communication and cooperation between the US and China are necessary as their competition develops. Both states may lessen any security dangers and improve world peace by creating common principles for the moral and safe use of these technologies. Addressing the wide-ranging impacts of this competition on international relations and national security would also involve multilateral collaboration with other key global parties. It is vital that China and the United States actively explore for ways to work together and make a commitment to building an environment of mutual respect and trust in the realm of emerging technologies.

Keywords*: Emerging Technologies, National Security, 5g Telecommunication, U.S – China Relations.*

DOI: 10.58934/jgss.v5i18.266

1. INTRODUCTION

Experts in the field of International Relations (IR) have widely recognized that advancements in technology have a substantial impact on shifts in power and global politics. In the 1970s, Robert Gilpin highlighted the fact that considerable scientific progress allows emerging countries to achieve political supremacy. However, he also noted that technical expertise and innovation ultimately become accessible to other nations. Subsequently, advocates of the "long cycle" thesis argued that emerging states gain control by virtue of their innovations in "leading sectors," or new industrial fields, that bolster the military and economic might of the dominant state. Additional studies have investigated the methods by which the leading state enforces or eases export restrictions in order to maintain its technological superiority. In addition, academics in the field of international relations are beginning to examine the relationship between politics and innovation in many countries, both established and developing (Kennedy & Lim, 2018).

While scholars in the field of international relations recognize the importance of innovation, there is currently a lack of a comprehensive framework that adequately explains the dynamics between rising and dominant states. Considering that innovation has increasingly been a central focus for fostering international collaboration in recent decades, this topic is gaining more importance. The extent to which the dominant state is receptive in many policy domains is influenced by societal interest groups, especially influential high-tech interests, as shown by recent research on US policies. Nevertheless, what factors impact the choices made by the ascending state in this domain, and at what point will the predominant state be compelled to counter it based on strategic considerations? This article begins by addressing these challenges by establishing the "innovation imperative" that the rising state must achieve in order to continue its global ascent and overcome the structural constraints that middle-income states experience. This necessitates the state to get and develop novel technology. The rising state's interactions with the dominant state are influenced by how it pursues this purpose. According to our theory, innovation-related activities could have two separate strategic implications, each of which has the ability to drive the dominant state to act. In the first scenario, the operations of the rising state create a considerable deterioration of the security environment in the dominant state, a phenomenon known as negative security externalities. In the second scenario, the actions of the rising state pose a hazard to the dominant state's desired international order; this phenomenon is known as negative order externalities (Kennedy & Lim, 2018).

The dominant state may be receptive to the rising state's interest in innovation in a number of ways. The dominant state is best positioned to benefit from the rising state's purchase of foreign technology because it is the world leader in technology. Additionally, the dominant state might be in support of expanded prospects for international collaboration in R&D and can consider the "taking" of open-source material as quite innocuous. On the other hand, the strategic aims of the dominant state may be jeopardized by the developing state's creative efforts. Specifically, we claim that technology and strategic competition are related by two elements of inventive activity. Both emerge from the idea that innovation may yield different sorts of externalities, which are repercussions that are separate from the personal aims of the participants (such as enterprises) engaging in the innovation activities. Security externalities and order externalities are the two forms of external repercussions that are significant to the strategic interaction between the rising power and the dominant state (William, 2016).

Security repercussions that come from economic activity are known as security externalities, and they may take many different forms. Previous research has argued that all trade, particularly in bipolar systems, has negative security externalities as the Ricardian gains and following economic expansion may be utilized to boost military capabilities. Research in a unique field focuses on the externalities connected to commerce in "dual-use" technology, or commercial advances with prospective military applications. Given that the acquisition of technology with military applications is likely to lead to friction between Great Powers, this latter line of inquiry is particularly germane to our aims here (William, 2016).

Utilizing materials in unique and creative ways has permitted technical advancements, which have traditionally been a primary driver driving human progress. The Iron Age and Bronze Age, for example, may be generally described by a single metal or alloy, but the material compositions of today's modern technologies encompass practically the full periodic table and are ever-changing. Thus, elements that were once unused are now needed in unprecedented amounts for commonplace items like cobalt for rechargeable batteries and indium for cell phones; for the production of renewable energy like dysprosium for wind power and tellurium for solar photovoltaic technologies; and for critical national security applications like germanium for infrared goggles and rhenium for jet engines. Concerns concerning the stability of these elements' supply have grown along with the demand for them. Many of the components required for cutting-edge technologies are obtained from mineral commodities that are produced in limited numbers of countries, recovered largely as byproducts, and generally not

recycled in considerable volumes after consumption. This causes complications. These worries have only grown as a result of recent high-profile instances of supply interruptions, such as China's 2010 restriction in its export limit for rare earth elements (REEs) and the protracted labour strikes that occurred in South Africa's platinum mines in 2012 and 2014 (Gulley, Nassar, & Xun, 2018).

For a significant time, the historical narrative of the national security exception in trade and investment has been interpreted through the prism of national security restrictions aimed to prevent military or territorial invasions. Thus, the security exception in international economic accords was envisioned as a "last-resort" that permits a country to disregard international economic responsibilities only if required and claimed in good faith to defend critical security. This is because the cornerstone of the existing global governance paradigm favours non-discriminatory commerce and aggressive cross-border investment. Nonetheless, theorizing national security is more complex and complicated in an age of new technologies that can have terrible effects in the future. Furthermore, a hegemonic fight is occurring between the two primary global powers. In an effort to justify its trade and investment policies against China, the United States has aggressively utilized national security in recent years. The key basis for doing so is a redefinition of national security that incorporates technological, ideological, and economic issues (Slawotsky, 2021).

The dominant state will probably take active action to block the provision of the essential technology when it can in order to handle security externalities. In the case that foreign technology is unavailable, this would mean acting in the market to prohibit or prevent particular transactions that raise red lights. The dominant state must take measures to preserve and develop the laws, conventions, and institutional frameworks that regulate state interactions within the given region in order to overcome order externalities. To induce regime compliance, this can entail the rising state threatening or penalizing infractions. Once the order is firmly established, the dominating state will be motivated to deploy all available enforcement mechanisms, whether bilateral or international. The dominant state will attempt to extend and strengthen domain-specific rules where they are underdeveloped. This might involve pushing countries that share similar ideas, encouraging conversations with them, or doing both (Gilpin, 2001).

2. THEORETICAL FRAMEWORK

The theory of balance of power is applied to the study of international relations in this book. During the Thirty Years' War (1618–1648), in the early 17th century, Europe gave origin to the theory of balance of power. As a response to the horrible wars and power struggles that dominated this period, it surged to prominence. The Thirty Years' War came to a conclusion in 1648 with the Peace of Westphalia, which is frequently considered as a turning point in the formation of the idea of balance of power. Even today, international relations and geopolitical strategy still strongly depend on this premise. An idea in international relations known as the doctrine of balance of power holds that no country should be allowed to collect sufficient strength to risk the existence of other states. Rather, authority ought to be divided and balanced throughout numerous countries to avoid any one of them from exceeding the others. The idea is to keep things steady and discourage large conflicts from developing. Throughout history, the notion of the balance of power has played a crucial role in influencing the foreign policy of various states and has shaped the establishment of coalitions and alliances. It has had a vital effect in establishing the global geopolitical environment and is frequently tied to the European state system, notably in the 18th and 19th centuries (Nexon, 2009).

The state is the major component of the international system when addressing ideas of international politics. Declaring a "state" to be the principal component does not diminish the relevance of other components, such as international law, multinational corporations, international organisations, and international personalities. We do not pull every detail from reality when discussing theory. Because reality is so complicated, theory is important in order to have a greater knowledge of it. If we incorporate every aspect in theory, theory also gets difficult. Theoretical and real states are identical. According to Waltz, "A theory specifies relations among them and indicates which factors are more important than others." In truth, one region cannot be separated from the others; everything is interrelated. To deal with one area intellectually, theory isolates it from all others. Developing a theory to explain what happens within a domain entail first isolating it. The phrase "sovereign equality" denotes a state's standing as the highest institution within its own boundaries and as an equal state before other nations on the international arena. Because of this, the state is considered as the core element of international politics, separate from other auxiliary factors. The bedrock of objective law, which controls state action, is human nature. The essential element of realism, balance of power, is significantly affected by Hobbesian ideas of human nature. Hobbes felt that mankind

desired for honour, glory, power, and dominion. People who are merely happy to appropriate material belongings over the long term would undoubtedly battle with others as they share identical objectives. Humans are by nature self-centered. Maybe they will exploit others as scapegoats so they may survive. For humans, the most essential thing is to survive. "Survival is the most important individual goal, because without it you cannot pursue any other goal." They must first guarantee their own survival in order to accomplish any good in this planet. The essentials for human existence include items like food, clothes, housing, security, and the like. Being a member of a community provides individuals a better feeling of security than living alone. In order to assure their safety and survival, people build families, communities, and nation states in general. For their own life, humans are bound to grow into social creatures (Giri, 2021).

For the past 500 years, the balance of power has been a basic principle in both international relations theory and practice. In the modern study of international relations, it has also been fundamental to some of the most major attempts to build a theory of international politics. Richard Little proposes a paradigm in this book that considers the distribution of power as a model, a myth, and a metaphor. Then, using this framework, he reevaluates four major publications that improve a theoretical understanding of international relations by applying the balance of power (Little, 2007). This research employs the balance of power theory to analyse the competitive relationship between China and the United States, taking into consideration the increasing technologies and their ramifications for the connected national security of both states. The hypothesis is placed against this context.

3. EMERGING TECHNOLOGIES

Emerging technologies (ET) have been the subject of various initiatives and political debate forums, causing a significant deal of controversy within the academic community. Although most studies agree when characterising the features associated with a specific ET, it is crucial to emphasise that ETs have an effect on society, the economy, and education (Montoro, Colon, Moreno, & Steffens, 2019).

According to Glossary (2023), the word "emerging technology" may apply to either a new technology or the continued development of an existing technology. It may also have slightly various connotations depending on the context, such as in the context of business, education,

science, media, or science. The expression is generally reserved for technologies that are having, or are predicted to have, a large societal or economic effect. It frequently refers to technologies that are in development or that should be available within the next five to 10 years.

Martin (2010), on the other hand, considers them in terms of their overall qualities. However, other authors point out that ETs are transcendent when they are related with emergency protocols, sustainability, creativity, and continual evolution. As a consequence, any debate on what ETs are will be intricately tied to the researcher's point of view, which prioritises identifying their major qualities and components as well as their effect on society and culture. Some, on the other hand, consider them as an evolution of technology itself. The eclecticism and ad hoc nature of the study findings, which were taken from different domains of competence, may be the source of this lack of consensus. Aiming to define, identify, and explore every developing component of technology and science, scientometrics has put focus on the development of analytical methodologies in light of these issues.

From this viewpoint, ETs are considered as an inventive science that serves to either develop new industries or change existing ones. They may also be defined as the unique technologies that have been and will continue to be generated throughout the course of the next five or 10 years. The aforementioned technologies are projected to profoundly influence both the financial and social realms (The Business Dictionary, 2018). Considering this definition, we typically presume that any new technology fits under the category of "emerging." This isn't totally true as several technologies have features that make them look "emerging," such as their usage, application, location, or area of expertise. The World Wide Web, which was built in the 1990s, can no longer be viewed as an ET invention. But web 2.0, web 3.0, and its children are considered as well as their respective applications. Stahl's (2011) research focused more on the consequences of ETs than ethics. Based on that, he characterises them as those technologies that will become especially essential in the next 10 or fifteen years (Montoro, Colon, Moreno, & Steffens, 2019).

4. OVERVIEW OF CHINA – UNITED STATES RELATIONS

In August 1784, the establishment of diplomatic ties between the United States and China occurred when The Empress of China journeyed to Guangzhou, a province located in southern China. According to the Office of the Historian of the U.S. Department of State, Guangzhou served as the central location for all trade with Western nations throughout the 18th century.

The new nation's initiation of commerce with China in tea, porcelain, and silk took place in 1784. It was only after more than fifty years that other Americans eventually travelled to China. The first American missionaries arrived in Guangzhou in February 1830. The American Board of Commissioners for Foreign Missions sent two Protestant preachers, Reverends Elijah Bridgman and David Abeel, to serve on the ship. Prior to his arrival, Bridgman had extensively studied Chinese history and culture. Dr. Peter Parker, the first medical missionary, returned to Guangzhou in 1834. As a result of the large number of patients, he rapidly surpassed the capacity of the little clinic he had established in the foreign region and transformed it into the Guangzhou hospital. Chinese tourists began visiting the United States at around the same time as Americans arrived in China. Three Chinese sailors were left abandoned on shore by a commercial ship when they arrived in Baltimore, Maryland, in 1785. They had arrived from Guangzhou, but there is no mention of their post-landing actions. Chinese history and culture were first introduced to the United States in 1839 when a Philadelphia merchant who had been trading with China for 12 years brought over a vast collection of artworks, artefacts, botanical samples, and other objects. Nathan Dunn, a merchant, created a museum in Philadelphia to promote his collection and offer visitors an insight into Chinese culture (Gokhale, 2021).

We also need to analyse China's history and its links with other nations, even those that do not directly involve the US, in order to have a fuller understanding of the U.S.-China relationship. The "Century of Humiliation," which stretched from 1839 to 1949 and saw China lose considerable territory to other nations, continues to impact how many Chinese regard China's standing in the international community to this day. The Opium War of 1839 marked the commencement of the "Century of Humiliation." Great Britain wanted to expand trade contacts with China in order to gain more of these goods after falling in love with Chinese tea, silks, and other things. Until the British offered opium, which the Chinese could not refuse, the Chinese resisted these efforts. China swiftly acquired an opium addiction as a consequence of Great Britain's opium exports. To prevent the opium trade, the Chinese emperor ordered Commissioner Lin Zexu to Guangzhou in 1838. At some time, Lin convinced the British to relinquish their supply of opium so that it may be destroyed. After that, the British departed Guangzhou for Macao, but the dispute over these happenings finally precipitated a war the next year. China and Great Britain initiated the Opium War (Guruswamy, 2009).

A U.S. Navy spy aircraft and a Chinese jet collided on April 1, 2001, as the planes were performing standard surveillance off the coast of China. In Hainan, China, the American

aircraft made an emergency landing. The PRC pilot killed in the collision, but the 24 American crew guys pulled it out unharmed. Up until April 11, the American crew and aircraft were imprisoned and questioned. The commotion swiftly dissipated, and it is uncertain which nation, if any, was to fault. With the rise of China's economy come increased worries about potential economic imbalances. The U.S.-China Act of 2000, which guaranteed Beijing permanent normal economic links with the United States, was signed into law by President Clinton in October 2000. September 2001 commemorated the final Tiananmen Square Incident, 1989 US attack on the Chinese embassy in Belgrade in 1999 US-China Aircraft Collision in 2001 2001 China's 1980 Reform and Opening Up permitted it to join the World Trade Organisation in return for a pledge to adhere by a number of trade norms. China surpassed Canada as the United States' second-largest trading partner by 2006. China overcame Japan in September 2008 to become the top in owning US debt. China has $1.3 trillion in US debt as of July 2013. China's GDP eclipsed that of the United States in 2010 and is anticipated to overtake it by 2027. The United States and China have had various political issues in addition to economic ones. For instance, in 2012, Chinese political dissident Chen Guangcheng, who was confined under house arrest for his vociferous support of human rights, managed to break out and gain asylum at the American embassy located in Beijing. Chen landed in the United States as a law student at New York University, where he now resides, and American officials-initiated talks with Chinese authorities (Bodomo, 2010).

Allowing Chen Guangcheng to enter the nation as a student rather than a political dissident helped to settle the situation. Hillary Clinton, the secretary of state, declared in 2011 that the United States would "pivot" from the Middle East to Asia. This was a reference to the United States placing its attention on political, military, and economic challenges within the Asia Pacific region. It is now more vital than ever to have regular connection with China as it has evolved to be a powerful nation that draws attention from throughout the world. President Barack Obama and President Xi Jinping first met in June 2013 at the Sunny-lands Summit. The two leaders met informally at Sunny-lands, a vast estate in Rancho Mirage, California, to discuss crucial concerns like North Korea, cyber security, and climate change. There are still a number of key problems that are causing tension between the United States and China, despite encouraging gestures and rhetoric of a "new-type great power relationship," a phrase that the Chinese leadership developed. For instance, the United States would have to support Japan in the case if the territorial disputes between China and Japan in the East and South China Seas culminated in hostilities, which would have a bad influence on relations between the two

nations. Not only does China abuse human rights, but the U.S.-China relationship is particularly problematic because of the China-Taiwan link. While many feel that the United States and China's relations are improving due to rising interdependence and competition, others argue differently. China is getting more active in regional and global issues, which can have unintended beneficial or negative implications on US-China ties. In any event, the condition of relations between the United States and China now is heavily impacted by their common history. The significance of U.S.-China connections in safeguarding the security and prosperity of both nations has risen owing to China's expanding power and influence in the global community (Das, 2013).

5. DRIVERS OF CHINA – U.S COMPETITION

There is now little hope of a satisfactory conclusion to the continuing economic war between the US and China. But the current battle between the two greatest economies in the world is about more than simply trade barriers and small-scale retribution; at its foundation, it is a contest for supremacy in the global technological arena. The US has publicly attacked China's trade surplus under President Trump, as well as its methods and policies relating to forced technology transfers, Internet Protocol (IP) theft, and cyber espionage. There is a deeper anxiety that the trade playing field is not level, which is the foundation for this rhetoric and subsequent actions. Furthermore, there is suspicion among US political elites and leaders of the so-called Five Eyes Countries regarding China's "Made in China 2025" industrial upgrade plan, which Beijing presented in 2015, as a huge menace to Western and American competitiveness in the high-tech sectors. The modern Chinese leadership regards having evolved technologically as one of the qualities of power. Strongly self-reliant, China is presently working on outperforming the US in various fields of technology while arguing that it can afford to break away from the US and seek its own independent road for scientific progress. Governments find it tough to place limits on technological integration based on nationality in the closely integrated global economy of today. President Trump's words and behaviour against durable friends across the world have placed doubt on the US's reliability as a partner and ally, rather than forging a coalition against China. Although the EU and other allies are worried about China, much like the US, they also want to have strong connections with both states and avoid taking sides. Accordingly, US allies may not always embrace the

more forceful components of the US approach (Schneider-Petsinger, Wang, Jie, & Crabtree, 2019).

Kim and Min-hyung (2019) claim that China's challenge to American hegemony is the fundamental source of rivalry between the two nations. China's emergence has presented a challenge to US hegemony over the preceding seven decades or more. China's economy has improved impressively since economic reforms were adopted in December 1978. Over the previous forty years, China's real GDP growth rate has been roughly 10 percent. Even though China's GDP is today the second biggest in the world, only topped by the USA, the nation was already the world's top exporter in 2010. China was the world's top investor in outbound foreign direct investment (FDI) and the top destination for inbound FDI among developing countries in 2011. In addition, China overtook the United States to become the leading dealer of items internationally in 2013. Furthermore, China was recognised as the top nation in the world in 2017 when examined using a purchasing power parity technique that accounts for price discrepancies. China's economic success is really astounding, given that in 1980 its GDP was one-tenth that of the United States on a PPP basis. One key danger to US hegemony in the world is China's swift climb to prominence as a rival hegemonic power. In actuality, China has been confronting the United States of America in a number of fields, and as a consequence, it has swiftly boosted its military, technological, and economic power and began to pose a risk to US global hegemony. As a consequence, a lot of scholars now regularly argue how the US is losing its hegemony and how China is going to do so. A hegemonic clash between the United States and China during the hegemonic transition period is even foreseen by some of them.

The second is that Beijing's ten-year industrial development goal is termed "Made in China 2025." It is "a blueprint for Beijing's plan to transform the country into a high-tech powerhouse that dominates advanced industries like robotics, advanced information technology, aviation, and new energy vehicles," as stated in the State Council of China's announcement and approval of it in 2015. The goal is to make China a manufacturing superpower that dominates the global market in future high-tech industries by increasing the competitiveness and innovation of Chinese industries and reducing China's reliance on foreign technology by achieving 40 percent of domestically manufactured basic components and basic materials by 2020 and 70 percent of self-sufficiency in core components and basic materials in industries like aerospace equipment and telecommunication equipment by 2025. In truth, "Made in China 2025" intends to convert China into an independent, cutting-edge, technology-driven economy, whereas the term "Made

in China" has traditionally been used to refer to low-quality, affordable commodities like garments, shoes, and consumer electronics. Beijing hopes they can break out from the so-called "middle-income trap that has plagued many developing countries" and its difficulties of growing wages and low productivity by turning towards greater value-added high-tech enterprises (Kim and Min-hyung, 2019).

6. IMPLICATION FOR THE CHINA – U.S NATIONAL SECURITY

There is a notion that the rising technological competition between the US and China would damage both nations' national security. This is owing to the fact that new technologies have an influence on countries' capacity to flourish diplomatically, militarily, and economically.

The ICT infrastructure that our military depends on may be badly interrupted, damaged, or even destroyed, as China has proved. The People's Republic of China (PRC) has conducted tests of several anti-satellite weapons, including as directed energy weapons, conventional ground-based kinetic kill vehicles, jamming and spoofing capabilities, and "kill-satellites" that are intended to destroy or disable other satellites in orbit. They have tested their capacity to spoof GPS systems, jam radar and communications, and boost their electronic warfare capabilities. Additionally, China has built some of the world's most powerful offensive cyber capabilities. In order to dominate future technologies, China is also making huge expenditures to improve its technological basis. China, in particular, has gone from being merely a copycat or consumer of these technologies to becoming an innovator in its own right because it regards artificial intelligence (AI) and quantum technology as important to long-term economic and military competitiveness.

The AI competition between China and the United States is currently extremely close. Though American publications are still more commonly cited, showing that they are more important and well-respected in the field, Chinese scientists currently generate more papers on AI than researchers from any other country. Significant improvements in AI applications, such as autonomous driving, real-time translation, natural language processing, and image analysis, have also been made by Chinese enterprises. The United States needs to build a national strategy to balance China's offset in the immediate and long term in order to counteract this. China's short-term aim is to take advantage of the inadequacies in the American military and apply persistent pressure to weaken us. To centralize its information warfare divisions, the

People's Liberation Army (PLA) developed the Strategic Support Force (SSF) in 2015. Notably, electronic warfare and space operations are covered in the SSF in addition to cyberwarfare. Information warfare is considered by the Chinese as a domain that spans communications, intelligence, and the complete electromagnetic spectrum, rather than being confined to computer networks.

Beijing observed a rising trend of international military competition in 2019 and referred to the early 21st century as a “period of strategic opportunity” for China to expand its influence both at home and abroad. By manipulating international conditions to favour its own national interests, China has declared that it will realize "the great rejuvenation of the Chinese nation" by 2049, the year of the People's Republic of China's (PRC) centenary (PRC 2019). Furthermore, at the 19th Party Congress, President Xi Jinping declared that China would "virtually finish" the modernization goals of the People's Liberation Army (PLA) by 2035 and maximize the PLA's expanded capabilities to be networked for "intelligentized warfare" by 2027. China has been pursuing its own offset strategy while incorporating the military application of new technology into other long-term national plan components. The PRC thinks that other nations may take advantage of its information-related shortcomings "to disrupt and degrade our military" and that these technologies "will determine the future global balance of both economic and strategic power." There is a large discrepancy between the US and China in the domain of "combined political-hybrid warfare" because of Beijing's aspirations to become a leader in innovation and technology as well as to lessen its information-related vulnerabilities. In several fields of military development, such as shipbuilding, land-based conventional ballistic and cruise missiles, and integrated air defence systems, China has already caught up to—or potentially surpassed—the United States, according to a 2020 Department of Defense (DoD) assessment (Rim, 2023).

The US declared, "We must re-train our military to operate in analogue mode without access to data and technology," in response to the aforementioned. Instead of purchasing systems that are very efficient when linked but completely incapable of functioning in areas where they are not allowed to, we must make sure that any new system or platform that the DoD purchases has at least a minimal degree of capability without access to space-based capabilities. In addition to inventing new ways for testing and maintaining the security of the chips we use in our armament; we also need to build a secure supply chain. We must establish new space architectures that do not rely on a limited number of highly competent but equally extremely

vulnerable government spacecraft. Instead, we must make advantage of commercial satellite capabilities, global alliances, and constellations of less costly, smaller satellites that are more robust and replaceable than individual, less capable satellites. We also need to create numerous systems and backups on the ground so that we are not fully reliant on space. These aren't new replies to fresh requests. Although we are aware of what must be done, we must take these solutions seriously (Carter, 2023).

7. CONCLUSION

In essence, the competition between China and the United States in creating technology has a huge influence on each country's national security. In terms of economic dominance and military strength, both countries are considerably investing in domains like artificial intelligence, 5G telecommunication, and quantum computing. It is apparent that the outcomes of this competition will have a substantial influence on international relations and the global technological environment. Both countries need to carefully consider the merits and drawbacks of these technologies and strive to adopt standards for their responsible development and usage. Maintaining stability in the face of rapid technological progress and resolving any security ramifications may also demand coordinated efforts and open communication. In order to make sure that cutting-edge technologies are generated and utilized in an ethical and open manner, constructive communication and cooperation between the US and China are necessary as their competition develops. Both states may lessen any security dangers and improve world peace by creating common principles for the moral and safe use of these technologies. Addressing the wide-ranging impacts of this competition on international relations and national security would also involve multilateral collaboration with other key global parties. It is vital that China and the United States actively explore for ways to work together and make a commitment to building an environment of mutual respect and trust in the realm of emerging technologies.

REFERENCES

Carter, W. (2023). " Chinese Advances in Emerging Technologies and Their Implications for US National Security" Centre for Strategic and International Studies (CSIS).

Gilpin, (2001). *War and change in world politics*, p. 34; G. John Ikenberry, *After victory: institutions, strategic restraint, and the rebuilding of order after major wars,* Princeton: Princeton University Press, pp. 50–79.

Giri, N., (2021). Balance of power theory in present international system, paper presented in Tribhuvan university, February 2021.

Gulley, A. L., Nassar, N. T., & Xun, S. (2018). China, the United States, and competition for resources that enable emerging technologies. Proceedings of the national academy of sciences, 115(16), 4111-4115.

Kennedy, A. B., & Lim, D. J. (2018). The innovation imperative: technology and US–China rivalry in the twenty-first century. International Affairs, 94(3), 553-572.

Kim, Min-hyung (2019). A real driver of US–China trade conflict. International Trade, Politics and Development, 3(1), 30–40. doi:10.1108/ITPD-02-2019-003.

Little, R. (2007). The balance of power in international relations (pp. 191-209). Cambridge: Cambridge University Press.

Montoro, M. A., Colón, A. M. O., Moreno, J. R., & Steffens, K. (2019). Emerging technologies. Analysis and current perspectives. Digital Education Review, (35), 186-201.

Nexon, D. H. (2009). The balance of power in the balance. World Politics, 61(2), 330-359.

Rim, H. J. (2023). The US–China Strategic Competition and Emerging Technologies in the Indo-Pacific Region: Strategies for Building, Dominating, and Managing Networks. Indo-Pacific Strategies and Foreign Policy Challenges, 60-78.

Schneider-Petsinger, M., Wang, J., Jie, Y., & Crabtree, J. (2019). US–China Strategic Competition. The Quest for Global Technological Leadership. London: Chatham House. The Royal Institute of International Affairs.

Slawotsky, J. (2021). The fusion of ideology, technology and economic power: Implications of the emerging new United States national security conceptualization. Chinese Journal of International Law, 20(1), 3-62.

William J. N., (2016). *Chinese economic statecraft: commercial actors, grand strategy, and state control* Ithaca, NY: Cornell University Press, pp. 12–13.