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BRICS and Intellectual Property Rights: Cooperation, Challenges, and the Future

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BRICS and Intellectual Property Rights: Cooperation, Challenges, and the Future

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Abstract

This paper is a qualitative examination of the legal systems and enforcement issues and economic consequences of Intellectual Property Rights (IPR) in BRICS nations- Brazil, Russia, India, China, and South Africa based on a normative juridical approach. The results show that there are gross imbalances in the management of IPR among these countries, with China and India being front runners in the innovation as well as enforcement reform. Meanwhile, Brazil, Russia, and South Africa have chronic issues of institutional capacity and judicial latitude. Although the international standards like TRIPS conform to the global standards, the impact of enforcement gaps and other socio-economic priorities affects the efficiency of IPR systems. The study indicates the two economic effects of IPR, which include promotion of innovation, investment and a concern about the availability of basic products. It highlights why there is need to have unified structures, improved enforcement systems, and moderation of innovation and equity in the BRICS nations.

Keywords: intellectual property rights; BRICS countries; legal frameworks; enforcement challenges; economic implications; innovation; TRIPS agreement; public health; access to technology; harmonization; policy recommendations

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Key Economic Indicators for BRICS Growth

The economic growth of BRICS nations—Brazil, Russia, India, China, and South Africa—is influenced by various key economic indicators. These indicators reflect the internal economic health of each country and its collective impact on the global economy. The primary indicators contributing to the growth of BRICS nations include GDP, foreign direct investment (FDI), trade openness, financial infrastructure, and innovation. These factors are interlinked and play a crucial role in shaping the economic trajectory of these countries. Below is a detailed examination of these indicators.

Gross Domestic Product (GDP)

The GDP of BRICS countries is a significant indicator of their economic growth. These nations account for about 20% of the global GDP, with China and India being major contributors due to their large economic size and rapid growth rates (Ouyang et al., 2019). The economic size of these countries has been a double-edged sword, with larger economies like China and India experiencing both positive and negative impacts on growth due to their size (Al-Jafari, 2018).

Foreign Direct Investment (FDI)

FDI is a critical driver of economic growth in BRICS nations. It positively and significantly affects long-term economic growth, as it brings in capital, technology, and expertise (Al-Jafari, 2018). However, the interaction of FDI with ICT resources is necessary to mitigate potential negative impacts, suggesting that FDI alone is insufficient without complementary technological infrastructure (Hammed & Ademosu, 2023).

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Trade Openness

Trade openness is another vital factor, as BRICS countries are major players in global trade. Their high trade intensity in various industrial sectors underscores their role as significant manufacturers and suppliers in the global market (Economic Growth, Trade and Investment Trends in BRICS, 2022). The openness to trade has been linked to increased productivity and economic growth, as it facilitates the exchange of goods, services, and technology (Rehman & Islam, 2022).

Financial Infrastructure

Developing financial infrastructure enhances total factor productivity (TFP) in BRICS countries. Improved financial markets and institutions support economic activities and growth by providing necessary financial services and resources (Rehman & Islam, 2022). Financial reforms and the promotion of financial dynamics are essential for sustaining the growth trajectory of these economies (Rehman & Islam, 2022).

Innovation and Technology

Investment in information and technology, although found to have a negative impact in some contexts, is essential for long-term growth when combined with other factors like FDI (Al-Jafari, 2018). ICT innovation plays a significant role in economic growth, with adequate ICT infrastructure necessary to harness the full potential of FDI and other economic activities (Hammed & Ademosu, 2023).

While these indicators are pivotal for the growth of BRICS nations, challenges such as regulatory shortcomings, socio-economic inequalities, and environmental concerns also shape their economic landscape. The BRICS countries face obstacles like political tensions and economic disparities, which can hinder their growth potential. However, initiatives like the New Development Bank and increased global collaboration offer opportunities for overcoming these challenges and promoting sustainable growth (BRICS, Sustainability and Green Growth: Unveiling the Impact of Macroeconomic Metrics on Carbon Emissions Reduction, 2025) (Moch, 2024).

BRICS Impact on Global Governance

The economic and innovation profiles of BRICS countries (Brazil, Russia, India, China, and South Africa) have significant implications for global governance and international cooperation. As emerging powers, these nations are reshaping the global economic landscape and challenging the traditional dominance of Western countries. Their collective efforts in economic and political spheres are fostering a more multipolar world order, which could lead to more balanced global governance structures. The BRICS countries' focus on innovation and economic growth further enhances their influence on global governance, as they seek to reform international institutions and promote equitable economic development. The following sections explore these implications in detail.

Economic Influence and Global Governance

The BRICS nations have gained more and more significance in the global economics, as they are a great part of the global population and world economy. Such an economic influence enables them to have a significant impact on the global governing organsms, threatening the supremacy of the West and promoting changes in the international finance organizations (Nayyar, 2016; Kaushik et al., 2024). The evidences of BRICS attempts to establish alternative financial mechanisms that facilitate economic equity and sustainability include the creation of the New Development Bank (NDB) and the Contingent Reserve Arrangement (CRA) (Haryono et al., 2024). The growth of BRICS to add such countries as Argentina, Egypt, Saudi Arabia makes its presence on the world map even more noticeable, which may result in the formation of the multipolar world and pressure on developed nations to comply with the offers of BRICS (Kaushik et al., 2024).

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Innovation and Economic Growth

Innovation Economic development of BRICS countries is also supported by innovation, although China is the first country to be rated as the most innovative, then Russia, India, Brazil and South Africa (Kankisingi, n.d.). This innovation strengthens their competitiveness and economic stability, which is a plus to their increasing role in global governance. To enhance the ability to innovate and promote economic cooperation, the BRICS countries have embarked on collaborative research and agreements, including the Memorandum of Understanding on Cooperation in Science, Technology, and Innovation (Sidorova, 2018). Nevertheless, BRICS have an opportunity to strengthen their economic influence and the impact on global governance through innovation cooperation despite the existing obstacles, which are different degrees of innovation and economic development of the member countries (Sidorova, 2018).

Challenges and Opportunities for International Cooperation

While BRICS countries have made significant strides in promoting multilateral cooperation and reforming global governance structures, internal tensions and geopolitical challenges hinder their cohesion and effectiveness (Haryono et al., 2024). The diverse political and economic systems of BRICS countries, particularly the authoritarian tendencies in China and Russia, raise concerns about their commitment to democratic principles and liberal rights, which could impact their ability to present a unified front in global governance (Vlados & Chatzinikolaou, 2020). The BRICS+ initiative, aimed at including more countries from the Global South, presents an opportunity for BRICS to expand its influence and promote a more inclusive and diverse world order. However, this expansion also requires greater political and economic integration among member countries to ensure sustainable growth and financial stability (Moch, 2024).

In conclusion, while the BRICS countries' economic and innovation profiles present significant opportunities for reshaping global governance and promoting international cooperation, they also face challenges related to internal cohesion and geopolitical tensions. The success of BRICS in influencing global governance will depend on their ability to strengthen internal unity, enhance innovation and cooperation, and address concerns about democratic principles and human rights. As the global landscape continues to evolve, the international community will closely watch BRICS' role in shaping a more balanced and multipolar world order.

BRICS vs Developed Innovation Ecosystems

The innovation ecosystems in BRICS nations (Brazil, Russia, India, China, and South Africa) exhibit distinct characteristics compared to those in developed economies. While BRICS countries are making significant strides in technological innovation and knowledge sharing, they face unique challenges and opportunities that differentiate their innovation systems from those in more developed nations. These differences are rooted in structural, institutional, and policy-related factors that influence the innovation landscape in these emerging economies. The following sections provide a detailed comparison of the innovation ecosystems in BRICS nations and developed economies.

Structural and Institutional Differences

BRICS countries have diverse national innovation systems (NIS) with varying performance levels. Russia's NIS is considered the most robust among the BRICS, while India's is the least effective, primarily due to weaknesses in innovation and institutional dimensions (Ibrahim et al., 2018). The innovation systems in BRICS are characterized by structural differences, such as disparities in intellectual property laws and data governance policies, which hinder seamless collaboration and innovation (Haryono, 2024). In contrast, developed economies typically have more harmonized legal frameworks and stronger institutional support for innovation, facilitating smoother collaboration and knowledge transfer.

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Innovation Outputs and Rankings

China leads the BRICS in innovation outputs and ranks highly in global innovation indices, followed by Russia. India's recent advancements in information and communication technology have improved its innovation prospects, while Brazil and South Africa lag (Kankisingi, n.d.). Developed economies often dominate global innovation rankings due to their established infrastructure, higher investment in R&D, and a more significant presence of technology-driven enterprises.

Policy and Economic Impacts

BRICS countries actively pursue policies to enhance innovation capabilities, such as joint R&D programs and international cooperation agreements. These efforts address digital inequality and cybersecurity threats (Haryono, 2024; Sidorova, 2018). The economic impact of innovation in BRICS is significant, with a positive correlation between innovation rankings and GDP growth. However, the pace and scale of innovation in these countries are still insufficient compared to developed economies (Kankisingi, n.d.) (Pitukhina et al., 2024). Developed economies benefit from long-standing policies that support innovation, including substantial government funding, tax incentives for R&D, and a strong emphasis on education and skills development.

Technological Advancements and AI Implementation

BRICS nations increasingly focus on technological innovations, particularly artificial intelligence (AI). China has made substantial progress in AI, becoming a global leader in AI research and application, while India is emerging as a leader in generative AI (Pitukhina et al., 2024). Developed economies have a more mature AI ecosystem, with extensive research, development, and application across various sectors, supported by significant investments and a robust talent pool.

While BRICS nations are making notable advancements in their innovation ecosystems, they face less prevalent challenges in developed economies, such as weaker institutional frameworks and less harmonized policies. However, the potential for growth and development in BRICS is substantial, driven by strategic policy initiatives and international cooperation. As these countries continue strengthening their innovation systems, they may increasingly close the gap with developed economies, particularly in areas like AI and digital technologies.

BRICS Innovation for Economic Competitiveness

Innovation plays a pivotal role in enhancing the economic competitiveness of BRICS countries by driving growth, fostering international cooperation, and enabling technological advancements. These nations leverage innovation through various strategies, including investment in research and development, fostering international collaborations, and focusing on digital transformation. The following sections detail how each of these strategies contributes to economic competitiveness.

Investment in Research and Development

BRICS countries have significantly increased their research and development (R&D) investment to boost innovation. This is evident from the positive correlation between innovation metrics, such as patent and trademark applications, and economic growth in these countries (Pradhan, 2023). China, in particular, has made substantial financial commitments to R&D, positioning it as a leader in innovation within the BRICS group (Pitukhina et al., 2024). The focus on R&D is not uniform across all BRICS countries, with Russia having a more developed national innovation system than others like India, which shows lower performance in this area (Ibrahim et al., 2018).

International Cooperation and Integration

BRICS countries have established frameworks for cooperation in Science, technology, and innovation, such as the BRICS Science, Technology, and Innovation Work Plan, which facilitates joint

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research projects and knowledge sharing (Sidorova, 2018). Creating common innovative infrastructure, including the BRICS Development Bank and Networked University, supports collaborative efforts and reduces dependency on foreign technology (Leonova & Malanicheva, 2018). These cooperative efforts are crucial for addressing global challenges, such as sustainable energy development, where each country contributes its unique strengths (Korneeva et al., 2024).

Digital Transformation and Technological Advancements

Digital transformation is a strategic priority for BRICS countries, with significant investments in digital infrastructure and education to improve competitiveness (Kolesnik et al., n.d.). The integration of ICT innovations has been shown to significantly contribute to economic growth, with ICT infrastructure playing a role in mitigating the negative impacts of foreign direct investment (FDI) (Hammed & Ademosu, 2023). Technological innovations, particularly in artificial intelligence, have been a focus, with China and India making notable progress in AI applications, which enhances their economic and social growth (Pitukhina et al., 2024).

Challenges and Opportunities

While BRICS countries have made significant strides in leveraging innovation for economic competitiveness, they face challenges such as economic disparities, policy misalignment, and geopolitical tensions that can hinder progress (Korneeva et al., 2024). Additionally, there are structural differences in national innovation systems, with some countries needing to strengthen their institutional and innovation dimensions (Ibrahim et al., 2018). Despite these challenges, the potential for BRICS to lead in global innovation remains high, provided they continue to enhance cooperation and address these barriers effectively.

India's IPR Framework and BRICS Alignment

India's Intellectual Property Rights (IPR) framework is a complex system designed to protect and promote innovation while aligning with international standards such as the TRIPS Agreement. The framework encompasses various forms of intellectual property, including patents, copyrights, trademarks, and trade secrets, each governed by specific legislation. India's approach to IPR is characterized by a balance between fostering innovation and ensuring access to essential goods, a challenge shared by other BRICS countries. The alignment of India's IPR policies with those of BRICS countries involves harmonizing legal frameworks and addressing enforcement challenges to support economic growth and innovation.

Key Components of India's IPR Framework

Patents: Governed by the Patents Act, 1970, which was amended in 2005 to comply with TRIPS, India's patent system includes provisions like Section 3(d) to prevent "evergreening" of patents, ensuring that only genuinely innovative products receive protection (Basheer, 2018). This approach balances innovation with public health needs, particularly in the pharmaceutical sector (M., n.d.).

Copyrights and Trademarks: The Copyright Act, 1957, and the Trademarks Act, 1999, protect creative works and brand identifiers, respectively. These laws are crucial for encouraging creative industries and protecting brand identity (Bhat, 2017).

Trade Secrets: Although not governed by a specific statute, trade secrets are protected under common law principles, which play a significant role in safeguarding confidential business information (Chauhan, 2024; Kumari, 2023).

National IPR Policy: Launched in 2016, this policy aims to create a conducive environment for innovation by strengthening IPR laws, improving enforcement, and raising awareness about IPR issues (Das, 2016).

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Alignment with BRICS Countries' Policies

Harmonization with TRIPS: India, along with other BRICS countries, has aligned its IPR framework with the TRIPS Agreement, which sets minimum standards for IPR protection globally. This alignment facilitates international trade and investment (Haryono et al., 2024) (Reichman, n.d.).

Enforcement Challenges: Despite legal reforms, enforcement remains challenging across BRICS countries, including India. Judicial delays and limited institutional capacity hinder effective IPR protection (Haryono et al., 2024).

Innovation and Economic Growth: India's IPR framework supports innovation, as evidenced by its rise in the Global Innovation Index. This growth is driven by advancements in information and communication technologies and the active role of higher education institutions in patenting innovations (Patil & Sagar, 2024).

Socio-Economic Considerations: Like other BRICS nations, India struggles to balance IPR protection with socio-economic priorities, such as access to affordable medicines and food security. This balance is crucial for sustainable development and equitable growth (Kochhar, 2008; M., n.d.).

While India's IPR framework is robust and aligned with international standards, it faces challenges similar to those of other BRICS countries, such as enforcement issues and socio-economic disparities. These challenges necessitate ongoing reforms and international cooperation to ensure that IPR systems effectively support innovation and economic development. The BRICS countries, including India, must continue to refine their IPR policies to address these challenges while fostering a conducive environment for innovation and equitable access to essential goods.

China's IPR vs BRICS for Innovation

China's Intellectual Property Rights (IPR) framework is a critical component of its strategy to transition from a manufacturing-based to an innovation-driven economy. Compared to other BRICS countries, China's IPR system is more advanced regarding legal reforms and enforcement, significantly contributing to its innovation outputs and economic growth. However, challenges remain in optimizing its IPR framework to sustain long-term growth. The following sections provide a detailed comparison of China's IPR framework with other BRICS countries, focusing on innovation and economic growth.

Legal Framework and Enforcement

China has made substantial progress in aligning its IPR laws with international standards, such as the TRIPS agreement, and has implemented significant reforms to strengthen enforcement mechanisms. This has positioned China as a leader in innovation among BRICS countries (Haryono et al., 2024) (Prud'homme & Taolue, 2017). India follows China regarding IPR reforms, particularly in the information and communication technology sector, which has bolstered its innovation prospects (Kankisingi, n.d.). Brazil, Russia, and South Africa face challenges related to institutional capacity and judicial delays, which hinder effective IPR enforcement and innovation (Haryono et al., 2024).

Innovation Outputs

China ranks highest among BRICS countries in innovation outputs, driven by strong patenting trends and state support for research and development (R&D) (Kankisingi, n.d.) (Prud'homme & Taolue, 2017). While second in innovation ranking, Russia lags behind China due to less robust IPR enforcement and economic diversification (Kankisingi, n.d.). India shows potential in innovation, particularly in technology sectors, but still trails China in overall innovation outputs (Kankisingi, n.d.).

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Economic Growth

China's economic growth is closely linked to its innovation capabilities, supported by a well-developed IPR framework that encourages domestic innovation and foreign direct investment (FDI) (Liu, 2016). The relationship between IPR protection and economic growth is complex. In contrast, strong IPR protection can drive growth by fostering innovation, but it can also create monopolies and limit competition if not balanced properly (et al., 2024) (Hu et al., 2014). Other BRICS countries, particularly Brazil and South Africa, experience slower economic growth due to weaker IPR systems and less effective innovation policies (Haryono et al., 2024) (Kankisingi, n.d.).

Challenges and Recommendations

Despite its advancements, China faces challenges in fully optimizing its IPR framework, such as addressing enforcement gaps and ensuring equitable access to technology (Prud'homme & Taolue, 2017). A stage-dependent approach to IPR, where protection levels are adjusted based on the country's development stage, is recommended to balance innovation and economic growth (Chu et al., 2011). BRICS countries are encouraged to strengthen cooperation in innovation and adapt their education systems to support their innovation aspirations (Kankisingi, n.d.).

While China's IPR framework is more advanced than that of other BRICS countries, it is not without its challenges. A balanced approach to IPR protection is crucial to avoid the pitfalls of over-protectionism, which can stifle innovation by making inputs too costly and cumbersome. Emerging economies like China must continue to refine their IPR policies to support sustainable economic growth while ensuring accessibility to technology and knowledge (Reichman, n.d.; Chang-lin, n.d.).

Brazil's IPR Impact on FDI and Tech Transfer

Intellectual Property Rights (IPR) frameworks in Brazil significantly influence foreign direct investment (FDI) and technology transfer, particularly in high-technology industries. The relationship between IPR protection and FDI varies across sectors and economic contexts. While stronger IPR protection can attract more FDI and facilitate technology transfer, the effectiveness of these frameworks is contingent upon several factors, including the local economic environment and the specific characteristics of the host country.

Impact on Foreign Direct Investment

High-Technology Industries: Strong IPR protection is crucial for attracting FDI in high-technology sectors. It assures foreign investors that their innovations and technologies will be safeguarded against unauthorized use, encouraging investment in these industries (Lima & Frandsen, 2015; Mansfield, 1994).

Low-Technology Industries: In contrast, the impact of IPR protection on FDI in low-technology industries is less pronounced. Here, private property protection plays a more significant role in attracting investment (Lima & Frandsen, 2015).

Quality of FDI: Stronger IPR protection increases the quantity of FDI and enhances its quality by attracting investments that involve more advanced technologies and higher value-added activities (Nunnenkamp & Spatz, 2004; Nunnenkamp & Spatz, 2003).

Influence on Technology Transfer

Technology Spillovers: IPR frameworks facilitate technology transfer by providing a secure environment for foreign firms to share their technologies. This is particularly important in high-technology industries where the risk of imitation is high (Mansfield, 1994; Yi & Naghavi, 2017).

Investment in Wholly Owned Subsidiaries: In countries with weaker IPR protection, foreign firms may prefer to invest in wholly owned subsidiaries rather than joint ventures, limiting the extent of technology transfer to local firms (Mansfield, 1994).

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Role of Institutional Quality: The effectiveness of IPR in promoting technology transfer is also influenced by the quality of local institutions. Countries with a smaller shadow economy and better institutional frameworks are more likely to benefit from increased FDI and technology transfer (Canavire-Bacarreza et al., 2012).

Challenges and Recommendations

Processing and Enforcement: Delays in patent processing and unpredictable court rulings can deter foreign investors. Improving the efficiency and predictability of the IPR system in Brazil is crucial for attracting more high-technology FDI (Lima & Frandsen, 2015).

Balancing IPR and Innovation: While strong IPR protection can attract FDI, it may also suppress domestic innovation and technology diffusion. Therefore, the level of IPR protection should be calibrated to balance these trade-offs, especially in developing countries (Yi & Naghavi, 2017).

While stronger IPR frameworks in Brazil can enhance FDI and technology transfer, the relationship is not straightforward and is influenced by factors such as industry type and institutional quality. Moreover, the optimal level of IPR protection may vary depending on the country's level of technological development and economic context. Therefore, a one-size-fits-all approach to IPR protection may not be suitable, and policies should be tailored to the specific needs and conditions of the host country (Yi & Naghavi, 2017; Tanaka & Iwaisako, 2013).

Russia's IPR Effect on Innovation and Growth

Russia's intellectual property rights (IPR) frameworks play a significant role in shaping the country's innovation landscape and economic growth. While Russia has made strides in aligning its IPR legislation with international standards, enforcement and institutional support challenges continue to impact its effectiveness. The relationship between IPR frameworks and economic growth in Russia is complex, involving both positive incentives for innovation and barriers due to enforcement issues. This analysis explores the multifaceted impact of IPR frameworks on innovation and economic growth in Russia.

Positive Impacts of IPR Frameworks

Incentivizing Innovation: Strong IPR frameworks can encourage innovation by providing legal protection for new inventions, thus incentivizing investment in research and development (R&D). This is crucial for fostering a knowledge-driven economy, as seen in other countries where robust IPR protections have increased R&D spending and economic growth (et al., 2024) (Farzpourmachiani et al., 2024).

Attracting Foreign Investment: Effective IPR protection can attract foreign direct investment (FDI) by protecting foreign companies' innovations. This can lead to technology transfer and the development of local industries, contributing to economic growth (Farzpourmachiani et al., 2024) (Liu, 2016).

Supporting Economic Diversification: By protecting local innovations, IPR frameworks can encourage domestic entrepreneurs to develop new products and services, leading to a more diversified and competitive economy (Farzpourmachiani et al., 2024).

Challenges and Limitations

Weak Enforcement: Despite having IPR legislation that meets international standards, Russia struggles with enforcement, leading to widespread piracy and counterfeiting. This undermines the potential benefits of IPR protection by stifling innovation and deterring foreign investment (Tamirisa, 1996; Tabatchnaia-Tamirisa, 1996).

Barriers to Innovation: The complexity and inefficiency of the patenting process in Russia can hinder innovation. Simplifying these procedures and increasing state support for innovative projects are necessary steps to enhance the effectiveness of IPR frameworks (Savin & Murzin, n.d.).

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Economic Transition Issues: Russia faces unique challenges in integrating IPR frameworks into its broader economic policies as a transition economy. The lack of coordination among different stages of the innovation cycle and structural elements of the national innovation system further complicates the situation (Popadyuk et al., 2016).

While strong IPR frameworks are generally associated with positive economic outcomes, they can also create monopolies and limit competition, potentially hindering the dissemination of knowledge and technology. This highlights the importance of balanced IP policies that promote innovation while ensuring accessibility to technology and knowledge (et al., 2024). In Russia, addressing enforcement issues and improving institutional support are critical to realizing the full potential of IPR frameworks in driving innovation and economic growth. Additionally, learning from the experiences of other countries and adapting successful practices to the Russian context could provide valuable insights for enhancing the effectiveness of IPR frameworks (Savin & Murzin, n.d.).

BRICS, South Africa: IPR and Growth

Intellectual Property Rights (IPR) regimes in the BRICS countries such as South Africa are critical towards influencing the innovation and economic development. These systems are meant to safeguard the works of inventors and corporations thus encouraging research and development (R&D) and economic development. Nevertheless, these frameworks are characterized by considerable differences in the BRICS countries because of stipulations between the country-level legal frameworks, enforcement capacities, and socio-economic priorities. Such difference affects the ability of IPR to spur innovation and economic development in these nations.

Legal Frameworks and Enforcement Challenges

BRICS states have gone a step further to harmonize their IPR settings with international laws such as TRIPS, however, gaps still exist. China and India have shown greater efforts in reforming their IPR systems to facilitate innovation, and Brazil, Russia, and South Africa deal with such challenges as institutional capacity and judicial delays (Haryono et al., 2024). The non-examining patent system has been reported to cause social costs in South Africa by not serving the national innovation system and encouraging exploitative interests by foreigners (Pouris and Pouris 2011; Pouris and Pouris 2010; Anastassios 2011).

Economic Implications of IPR

IPR frameworks in BRICS countries have a dual economic impact: they can foster innovation and attract investment, but they also raise concerns about access to essential goods and the potential for monopolies that limit competition (Haryono et al., 2024) (- et al., 2024). The current IPR regime in South Africa is seen as detrimental to economic development, as it does not effectively support innovation or technology transfer (Pouris & Pouris, 2011; Pouris & Pouris, 2010; Anastassios, 2011).

Innovation and Knowledge Sharing

In the present digitally growing world opportunities for economic transformation due to technological advancement and knowledge sharing. However, disparities in IPR laws and data governance policies among BRICS countries hinder seamless collaboration and innovation (Haryono, 2024). Unified intellectual property agreements and joint R&D programs are proposed to enhance innovation and collaboration, which could lead to sustainable economic transformation (Haryono, 2024).

The Role of Human Capital and Education

Economic development, openness, and education influence the link between IPR and innovation in developing nations. These factors significantly contribute to innovation, suggesting that a balanced approach to IPR protection is necessary (Rassâa & Abdennebi, 2018). An inverted U-type relationship

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exists between IP protection and economic growth, indicating that excessive strengthening of IPR does not always lead to growth. Instead, a higher level of human capital and strong imitation capabilities can enhance the economic benefits of IPR protection (YANG et al., n.d.).

While IPR frameworks in BRICS countries, including South Africa, are designed to promote innovation and economic growth, their effectiveness is influenced by various factors such as legal enforcement, socio-economic priorities, and human capital. The challenges faced by these countries highlight the need for harmonized frameworks and balanced policies that promote innovation while ensuring equitable access to technology and knowledge. This approach could mitigate the negative impacts of IPR, such as monopolies and limited competition.

BRICS IPR Cooperation and Innovation

The collaboration of BRICS in Intellectual Property Rights (IPR) bears a great deal on the innovation and economic development of the member countries because of the creation of the favorable environment of tech development and investment. The association of Brazil, Russia, India, China, and South Africa is also directed towards the harmonization of IPR systems that may result to the enhanced innovation and growth. Nevertheless, there are still differences in legislation and implementation issues, which influence the overall performance of this work. The effects of BRICS cooperation on IPR can be explained based on a number of aspects.

Harmonization of IPR Frameworks

BRICS The BRICS markets have made attempts to align their IPR with global practices like the TRIPS Agreement that is important in promoting innovation and foreign direct investment (FDI) (Haryono et al., 2024; Kennedy et al., 2024). Nevertheless, there still exist wide gaps in the management of IPR across the BRICS countries, with China and India on the forefront in the reform of innovation and enforcement. Simultaneously, Brazil, Russia, and South Africa are affected by the issues of institutional capability and judicial procrastination (Haryono et al., 2024).

Economic Growth and Innovation

IPR Protection of IPR is positively related with the GDP growth since it provides incentives to invest in research and development (R&D) and promotes the development of IP-driven industries, including technology and pharmaceuticals (et al., 2024) (Liu, 2016). Patenting activities have been on the rise among the BRICS countries and especially in China and India, so it has been observed that a higher GDP rate can be attributed to a strong IPR system and hence economic growth (Kumar & Singh, 2015).

Challenges and Opportunities

The digital age presents opportunities for BRICS nations to leverage technological innovation and knowledge sharing as catalysts for economic transformation. However, disparities in intellectual property laws and data governance policies hinder seamless collaboration (Haryono, 2024). Developing countries, including BRICS, must balance the benefits of IPR protection with the potential drawbacks, such as creating monopolies and limiting competition. A nuanced approach to IPR regulation is necessary to promote innovation while ensuring accessibility to technology and knowledge (Reichman, n.d.; Kennedy et al., 2024).

Role of R&D and FDI

The BRICS countries heavily rely on the R and D capacity and FDI to drive growth. The protection of IPR is associated with increased knowledge capital accumulation either with local R&D or foreign R&D trade cooperation, contributing to a sustainable economic growth (Cheng et al., 2024). The association of IPR protection and economic growth is not simple and it may depend on level of

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economic development and technological gap. An example is that lax protection of IPR can encourage technological innovation in areas with high level of technological distance (Chang-lin, n.d.).

Although BRICS collaboration in IPR can have a profound effect on innovation and economic development, there is need to discuss the existing gaps and enforcement issues to maximize the benefits of the idea. Cooperation between BRICS countries can result in the unified IPR systems that will support innovation and economic growth. Nevertheless, there should be a middle way that is reached and that looks at the advantages and issues surrounding IPR protection. Also, the contribution of R&D and FDI to the economic growth shows that it is essential to provide an environment that encourages innovation and investment..

BRICS IP Harmonization and Enforcement

The BRICS nations (Brazil, Russia, India, China, and South Africa) have a major problem in aligning their intellectual property (IP) systems because of the various legal systems, enforcement capacities, and economic priorities. Even though China and India have been on the right track in their efforts to innovate and effect reforms in enforcement, Brazil, Russia, and South Africa still face institutional and judicial hurdles. These differences in IP regulation between these countries underline the issue with harmonizing with the international regulations such as TRIPS with the local socio-economic requirements. This has been complicated by the fact that IP rights have two economic effects, encouraging innovation and investment and creating an issue related to access to essential goods (Haryono et al., 2024).

Challenges in Harmonizing IP Regimes

Diverse Legal Frameworks: The BRICS countries have varied legal systems and levels of IP protection, making harmonization difficult. For instance, China has adopted a maximalist approach to TRIPS, while India has taken a more minimalist stance, reflecting their different economic strategies and priorities (Serrano, 2016).

Institutional Capacity and Judicial Delays: Brazil, Russia, and South Africa face significant challenges related to institutional capacity and judicial delays, which hinder effective IP enforcement. These issues contribute to inconsistent IP protection across the BRICS nations (Haryono et al., 2024).

Economic and Socio-Political Priorities: The need to balance IP protection with socio-economic priorities, such as access to affordable healthcare and protection of indigenous knowledge, further complicates harmonization efforts. Each country must tailor its IP regime to its unique economic and social context (Greenbaum, 2009).

Enforcement of Intellectual Property Rights

China's Enforcement Reforms: China has become increasingly litigious in IP matters, with more cases filed annually than in the United States. This shift indicates a stronger enforcement regime, although challenges remain in addressing widespread IP infringement (Nguyen, 2011).

India's Critical Approach: India has pursued a more critical approach to IP enforcement, focusing on flexibility and exemptions within international agreements to support local innovation and access to essential goods (Serrano, 2016).

Comparative Analysis: The enforcement of IP rights varies significantly across the BRICS countries, with China and India leading in reforms, while Brazil, Russia, and South Africa lag due to institutional and judicial challenges (Haryono et al., 2024).

Economic Implications and Innovation

Fostering Innovation: Effective IP regimes can protect small- and medium-sized enterprises from larger competitors, fostering innovation and investment. However, overly restrictive IP regimes can stifle innovation by making inputs too costly (Reichman, 2009).

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Balancing Innovation and Access: The BRICS countries must balance protecting IP with ensuring access to essential goods and services. This balance is crucial for promoting innovation and equity within these nations (Haryono et al., 2024).

While the BRICS countries face major challenges in harmonizing their IP regimes, there are opportunities for these nations to leverage their unique experiences and tailor IP policies to local needs. By pursuing a policy of counter-harmonization, BRICS countries can establish regional and local practices that promote innovative and flexible uses of IP. This approach allows them to capture the benefits of IP protection while avoiding the pitfalls of over-protectionist regimes in developed countries (Reichman, 2009).

Role of BRICS in Global IP Policy and Governance

The BRICS nations—Brazil, Russia, India, China, and South Africa—play a significant role in shaping global intellectual property (IP) policy and governance. As emerging economies with substantial influence, they have the potential to redefine the landscape of IP rights through their collective and individual actions. However, disparities in legal frameworks and enforcement challenges among these countries present opportunities and obstacles in their quest to harmonize IP policies and contribute to global governance. The following sections explore the role of BRICS in global IP policy and governance, highlighting key initiatives, challenges, and potential impacts.

Disparities in IP Governance

There is a high level of unequal IP governance systems in the BRICS countries. In China and India, it is observed that the reforms that have been made in innovations and enforcement are progressive and strong, whereas Brazil, Russia, and South Africa experience issues concerning the capacity of institutions and judiciary delays (Haryono et al., 2024). Even though there has been a move towards international standards like the TRIPS Agreement, areas of enforcement still remain weak, as part of socio-economic priorities and institutional development (Haryono et al., 2024).

Harmonization Efforts and Challenges

It is acknowledged that there is a necessity in harmonization of juridical mechanisms of the BRICS countries in order to address the digital inequality and cybersecurity risks. The ideas of the combined IP agreements and uniform policies to manage data governance are offered to enhance innovation and cooperation (Haryono, 2024). The differences in the IP laws and their implementation in the BRICS countries make it challenging to have smooth cooperation and thus, there is the need to harmonize the IP laws and other related frameworks to amplify their impact on the global IP governance (Haryono, 2024).

Economic Implications and Innovation

The two-fold economic effect of IP rights in the BRICS countries can be observed: on the one hand, it promotes innovation and investment, on the other hand, it is feared that there is a lack of access to basic goods. This highlights the necessity of a moderate stance towards innovation and equity (Haryono et al., 2024). The digital era is the epoch of economic restructuring based on technological innovation and knowledge exchange, and BRICS countries consider collaborative R&D initiatives to improve their competitiveness on the international level (Haryono, 2024).

Global Governance and Multilateral Engagement

The participation of BRICS in international institutions is described as alternative and parallel treatment and a catalyst approach, whereby they harmonize their position on the issues and create their own institutions such as the New Development Bank (Shelepov, 2015). Reform of the international financial architecture and involvement in a multipolar world order, among others, are

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the signs of potential, though the cohesiveness within the bloc appears to be a difficult task (Kaushik et al., 2024).

Although BRICS has done significant progress in development of global IP, internal differences and geopolitical issues constrain their capability to make a unified face. The possibility of BRICS redefining the world system is high, but only under the condition that it reinforces domestic cohesiveness and improves its normative outlook on a more inclusive international system (Haryono et al., 2024). The dynamics are also complicated by the expansion of BRICS, with new members, and this offers opportunities and challenges to the development of the bloc in terms of its impact on the global IP governance (Kaushik et al., 2024).

BRICS and International IP Agreements

The BRICS countries—Brazil, Russia, India, China, and South Africa—have shown varied responses to international intellectual property (IP) agreements such as TRIPS and WIPO, reflecting their unique socio-economic contexts and developmental priorities. These nations have been navigating the complex landscape of aligning with international IP standards while addressing domestic needs, particularly in public health and innovation. The BRICS countries have made strides in reforming their IP systems, but challenges remain in enforcement and balancing innovation with access to essential goods. This response explores the BRICS countries' engagement with international IP agreements, highlighting their strategies, challenges, and potential for collective action.

Alignment with International Standards

China and India: These countries have proactively reformed their IP systems to align with international standards, particularly TRIPS. China has engaged actively in global IP governance, focusing on capacity building and regional initiatives like the Belt and Road Initiative (BRI) (Haryono et al., 2024) (Cheng, 2019).

Brazil and South Africa: Both countries have faced challenges aligning their IP laws with TRIPS, particularly in the pharmaceutical sector. Brazil has utilized compulsory licensing to address public health needs, while South Africa has struggled to balance patent protection and access to affordable medicines (Reis, 2024; Bass, 2002).

Challenges in Enforcement and Innovation

Enforcement Gaps: Despite progress, enforcement of IP rights remains a significant challenge in BRICS countries, with issues such as institutional capacity and judicial delays hindering effective implementation (Haryono et al., 2024).

Innovation vs. Access: The dual economic impact of IP rights—promoting innovation while potentially restricting access to essential goods—poses a dilemma. Countries like Brazil have used compulsory licensing to ensure access to medicines, but this approach can deter private sector investment (Reis, 2024).

Strategies for Flexibility and Collaboration

Counter-Harmonization: BRICS countries have explored strategies like counter-harmonization, utilizing flexibilities within international agreements to tailor IP regimes to local needs. This includes research exemptions, compulsory licenses, and fair use provisions (Reichman, 2009; Reichman, n.d.).

Coalition Building: There is potential for BRICS countries to form coalitions to strengthen their bargaining position in international IP negotiations. However, differences in political, social, and economic contexts pose challenges to sustained collaboration (Yu, 2008).

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Potential for Collective Action

BRICS Alliances: While forming a cohesive BRICS coalition has been challenging, partial alliances with other developing countries could enhance collective bargaining power and promote democratic decision-making in the international IP regime (Yu, 2008).

Role in Global IP Governance: Emerging economies like China and India can influence global IP norms by advocating for more equitable access and participation in international lawmaking processes (Dreyfuss, 2009; Cheng, 2019).

While BRICS countries have made significant efforts to align with international IP agreements, they face challenges in enforcement and balancing innovation with access. The potential for collective action and strategic use of flexibilities within international agreements offers a pathway for these countries to address their unique needs while contributing to global IP governance. However, the diverse political and economic landscapes of BRICS countries may complicate efforts to form a unified front in international negotiations.

BRICS: Digital, Green Tech, and IP Reform

The BRICS nations, comprising Brazil, Russia, India, China, and South Africa, face unique challenges and opportunities in the digital economy, green technology, and intellectual property (IP) rights. As these countries navigate the complexities of digital sovereignty, technological innovation, and sustainable development, there is a pressing need for collaborative efforts and policy reforms to strengthen IP cooperation. This response explores the emerging issues and offers recommendations for future collaboration and reform within the BRICS framework.

Digital Economy and Sovereignty

The BRICS nations are at different stages of digital development, which presents opportunities and challenges for achieving digital sovereignty. The concept of BRICS+ digital sovereignty involves creating a unified approach to digital governance, which includes developing a digital sovereignty memorandum, launching a regulatory sandbox, and deploying a sovereign cloud to enhance cooperation and policy-making within the alliance (Gromova & Ferreira, 2024). The BRICS Digital Economy Partnership Framework, launched in 2022, aims to address cybersecurity, data protection, and e-commerce issues, promoting a comprehensive digital governance framework that can be leveraged for mutual benefit (Ayodele & Petla, n.d.).

Green Technology and Sustainable Development

Digital innovations are crucial in advancing green technology systems, with significant positive impacts observed in sectors like renewable energy, sustainable agriculture, and waste management. For instance, smart grids and blockchain technology have improved energy management, while IoT-based precision farming has enhanced agricultural productivity (Eshbayev et al., 2024). Technological integration, economic barriers, and regulatory issues persist despite these advancements. Collaborative efforts between governments, businesses, and the tech industry are essential to overcome these hurdles and promote sustainable development (Eshbayev et al., 2024).

Intellectual Property Rights and Innovation

Disparities in IP laws and enforcement among BRICS countries hinder seamless collaboration. Harmonizing juridical mechanisms, such as unified IP agreements and standardized data governance policies, is crucial for fostering innovation and economic transformation (Haryono, 2024). The governance of IP rights in BRICS countries reveals significant challenges, with China and India leading in innovation and enforcement reforms. At the same time, Brazil, Russia, and South Africa face institutional capacity issues. A balanced approach to IP that fosters innovation while ensuring access to essential goods is necessary (Haryono et al., 2024). Emerging economies can benefit from counter-harmonization policies that promote innovative, flexible uses of IP, such as research

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exemptions and compulsory licenses, to avoid the pitfalls of over-protectionist regimes (Reichman, 2009).

Opportunities for Future Collaboration and Reform

Strengthening international cooperation and public education on IP rights can facilitate innovation and development in the digital economy. Dynamic regulatory frameworks that balance innovation with risk management are essential for maintaining a competitive edge (Kumar & Kumar, 2024). Integrating law and technology and international cooperation can enhance the IP protection system, promoting healthy growth in the digital economy (Yao, 2024).

While the BRICS nations have made strides in digital economy innovations and green technology, challenges remain in harmonizing IP laws and fostering sustainable development. The need for collaborative efforts and policy reforms is evident, as these countries work towards achieving digital sovereignty and sustainable economic transformation. By leveraging their collective strengths and addressing disparities, the BRICS nations can enhance their global influence and drive innovation in the digital age.

Conclusions

In order to resolve the perceived challenges, BRICS nations need to reinforce the enforcement mechanisms, standardize legal frameworks, sensitize stakeholders, and use technology to improve transparency and efficiency. Policymakers should also be able to take a middle ground that encourages innovation and also availability of essential goods and technologies. Through these problems, the BRICS countries will be able to make the fullest use of IPR as the driver of sustainable economic growth and international competitiveness.

References

-, P. P., -, U. R., -, S. K., & -, K. N. (2024). The Role of Intellectual Property in Fostering Innovation and Economic Growth. *International Journal For Multidisciplinary Research*. https://doi.org/10.36948/ijfmr.2024.v06i05.28732

Al-Jafari, M. K. (2018). Determinants of Economic Growth in BRICS Countries: A Panel Data Analysis Approach. *International Journal of Accounting and Financial Reporting*. https://doi.org/10.5296/IJAFR.V8I3.13372

Anastassios, P., Anthipi, P. (2011). Patents and economic development in South Africa : managing intellectual property rights : research article. *South African Journal of Science*.

Ayodele, O., & Petla, V. (n.d.). *Leveraging the BRICS Digital Partnership for Collaborative Digital Governance*. https://doi.org/10.36615/feg0h138

Basheer, S. (2018). Trumping TRIPS: Indian patent proficiency and the evolution of an evergreening enigma. *Oxford University Commonwealth Law Journal*. https://doi.org/10.1080/14729342.2018.1455479

Bass, N. A. (2002). Implications of the Trips Agreement for Developing Countries: Pharmaceutical Patent Laws in Brazil and South Africa in the 21st Century. *The George Washington International Law Review*.

Bhat, J. S. R. (2017). Innovation and intellectual property rights law—an overview of the Indian law.*Iimb Management Review*. https://doi.org/10.1016/J.IIMB.2017.12.003

BRICS, Sustainability, and Green Growth: Unveiling the Impact of Macroeconomic Metrics on Carbon Emissions Reduction. (2025). https://doi.org/10.52783/eel.v15i1.2397

Canavire-Bacarreza, G., Canavire-Bacarreza, G., Saravia, A., & Rios-Avila, F. (2012). Intellectual Property Rights, Foreign Direct Investment, and the Shadow Economy. *Social Science Research Network*. https://doi.org/10.2139/SSRN.2647096

Chang-lin, Y. (n.d.). *Protection of Intellectual Property Rights and Economic Growth in Developing Countries*. https://doi.org/10.3969/j.issn.0438-0460.2010.02.007

Chauhan, K. (2024). *Intellectual Property Rights and Innovation: A Study of India's Legal Framework*. https://doi.org/10.36676/ijl.v2.i3.35

 doi:10.20944/preprints202510.0796.v1

Cheng, P., Wang, M. N., & Choi, B.-R. (2024). IPR Protection and Sustainable Economic Growth: Domestic R&D Level and International R&D Trade Cooperation Perspective. *Sustainability*. https://doi.org/10.3390/su16146051

Cheng, W. (2019). China engages with the global intellectual property governance: The recent trend. *The Journal of World Intellectual Property*. https://doi.org/10.1111/JWIP.12122

Chu, A. C., Cozzi, G., & Galli, S. (2011). Innovating like China: a theory of stage-dependent intellectual property rights. *Research Papers in Economics*.

Das, A. M. (2016). India Releases National Intellectual Property Rights Policy—*Current Science*.

Dreyfuss, R. C. (2009). The Role of India, China, Brazil, and Other Emerging Economies in Establishing Access Norms for Intellectual Property and Intellectual Property Lawmaking. *Social Science Research Network*. https://doi.org/10.2139/SSRN.1442785

Economic Growth, Trade and Investment Trends in BRICS. (2022). https://doi.org/10.4324/9781003148074-6

Eshbayev, O., Xursandov, K., Pulatovna, K. U., Sitora, A., & Jamalova, G. (2024). Advancing Green Technology Systems through Digital Economy Innovations: A Study on Sustainable.*E3S Web of Conferences*. https://doi.org/10.1051/e3sconf/202457602009

Farzpourmachiani, M., Basiri, S., Modaresrad, S., Farzpourmachiani, A. F. A., & Masouleh, S. N. (2024). *Investigation of Intellectual Property Rights and Their Effects and Advantages in Economic Development*. https://doi.org/10.35629/5252-06124650

Greenbaum, D. (2009). Determining optimal levels of intellectual property protection in developing nations: Is less really more? Is more really less? *Current Science*.

Gromova, E., & Ferreira, D. B. (2024). On the Way to BRICS+ Digital Sovereignty: Opportunities and Challenges of a New Era. *BRICS Law Journal*. https://doi.org/10.21684/2412-2343-2024-11-3-54-69

Hammed, Y. S., & Ademosu, S. T. (2023). ICT Innovation, FDI and Economic Growth: Evidence from BRICS. *Journal of Economics and Behavioral Studies*. https://doi.org/10.22610/jebs.v15i2(j).3508

Haryono, H. (2024). BRICS in the Digital Age: Investigating Technological Innovation and Knowledge Sharing as Catalysts for Economic Transformation. *The Eastasouth Journal of Information Systems and Computer Science*. https://doi.org/10.58812/esiscs.v2i02.399

Haryono, H., Utari, W., Rahmawati, D. A., Endarto, B., & Santoso, B. T. (2024). Intellectual Property Rights in BRICS Countries: Legal Frameworks, Enforcement Challenges, and Economic Implications. *West Science Interdisciplinary Studies*. https://doi.org/10.58812/wsis.v2i12.1550

Haryono, H., Utari, W., Rahmawati, D. A., Endarto, B., & Sanusi, R. (2024). Evaluating the Role of BRICS in Shaping Global Economic Governance: A Comparative Analysis of Policy Approaches and Outcomes. *The Es Economics and Entrepreneurship*. https://doi.org/10.58812/esee.v3i02.400

Hu, J.-L., Chen, H.-Y., & Tsai, F.-Y. (2014). Exploring the Endogenous Relationship between Intellectual Property Rights Protection and Economic Growth. *Journal of Information and Optimization Sciences*. https://doi.org/10.1080/02522667.2014.914270

Ibrahim, A., Kasem, A. N., & Marah, A. (2018). *A comparative analysis of national innovation systems' structures and developmental impacts (Evidence from BRICS countries)*. https://doi.org/10.17586/2310-1172-2018-11-1-13-20

Kankisingi, G. M. (n.d.). *A Trajectory of Innovation Outputs among the BRICS Countries: Critical Perspectives of Brazil, Russia, India, China, and South Africa*. https://doi.org/10.34256/iorip20281

Kaushik, S., Mahipal, P., & Patel, M. (2024). Brics expansion: reshaping global economic governance. *ShodhKosh Journal of Visual and Performing Arts*. https://doi.org/10.29121/shodhkosh.v5.i6.2024.3635

Kennedy, A. J., Hikmah, S. A., & Mustika, S. R. (2024). The Role of Intellectual Property Law in International Trade and Economic Development: TRIPS. *Pakistan Journal of Life and Social Sciences*. https://doi.org/10.57239/pjlss-2024-22.2.001321

Kochhar, S. (2008). *Institutions and Capacity Building for the Evolution of Intellectual Property Rights Regime in India: V – Analysis of Review of TRIPS Agreement and R&D Prospect in Indian Agriculture under IPR Regime*.

Kolesnik, E. A., Stepanov, V., & Pavlova, L. L. (n.d.). On the Way to the Digital Age - Problems and Prospects of Countries with Emerging Economies. *SHS Web of Conferences*. https://doi.org/10.1051/shsconf/202317202006

Kumar, D., & Kumar, P. (2024). Protecting Intellectual Property Rights in the Digital Age. *International Journal For Multidisciplinary Research*. https://doi.org/10.36948/ijfmr.2024.v06i03.20153

 doi:10.20944/preprints202510.0796.v1

Kumar, D., & Singh, N. (2015). Patenting Trends among BRICS and Effect on GDP. *Economic Affairs*. https://doi.org/10.5958/0976-4666.2015.00067.4

Kumari, P. (2023). *Intellectual Property Rights and Innovation: A Study of India's Legal Framework*. https://doi.org/10.36676/ijl.2023-v1i1-02

Leonova, T., & Malanicheva, N. (2018). *Creation of the common innovative infrastructure of the BRICS countries*. https://doi.org/10.26425/1816-4277-2018-2-27-30

Lima, L., & Frandsen, B. (2015). *Foreign Direct Investment and Property Protection in Brazil*.

Liu, W.-H. (2016). Intellectual Property Rights, FDI, R&D and Economic Growth: A Cross-country Empirical Analysis. *The World Economy*. https://doi.org/10.1111/TWEC.12304

M., G. K. (n.d.). *Product Patents And Access To Medicines In India: A Critical Review Of The Implementation Of TRIPS Patent Regime*. https://doi.org/10.2202/1943-3867.1061

Mansfield, E. (1994). *Intellectual Property Protection, Foreign Direct Investment, and Technology Transfer*.

Moch, E. (2024). The Economic and Geopolitical Significance of the BRICS Nations: A Comparative Analysis of Their Global Influence in the 21st Century. *East African Journal of Business and Economics*. https://doi.org/10.37284/eajbe.7.2.2310

Nayyar, D. (2016). BRICS, developing countries, and global governance. *Third World Quarterly*. https://doi.org/10.1080/01436597.2015.1116365

Nguyen, X.-T. (2011). The China We Hardly Know: Revealing the New China's Intellectual Property Regime. *Social Science Research Network*.

Nunnenkamp, P., & Spatz, J. (2003). Intellectual property rights and foreign direct investment: the role of industry and host-country characteristics. *Research Papers in Economics*.

Nunnenkamp, P., & Spatz, J. (2004). Intellectual property rights and foreign direct investment: A disaggregated analysis. *Research Papers in Economics*.

Ouyang, Y., Yi, X., & Tang, L. (2019). *Economic Growth and Transformation Path of the BRICS Countries*. https://doi.org/10.1007/978-981-32-9744-9_4

Patil, U., & Sagar, Dr. S. (2024). *Analyzing The Legal Framework For Intellectual Property Commercialization In Indian Higher Educational Institutions: A Doctrinal Study*. https://doi.org/10.53555/kuey.v30i4.2798

Pitukhina, M., Gurtov, V. A., & Belykh, A. D. (2024). Technological Innovations and Artificial Intelligence Implementation in Global Economic Processes Development: Experience of BRICS Countries. *Transbaikal State University Journal*. https://doi.org/10.21209/2227-9245-2024-30-1-119-129

Popadyuk, T., Bogachev, Y., Abdikeyev, N., Геннадьевна, Т. П., Сергеевич, Ю. Б., & Мустякимович, Н. А. (2016). Институциональное Обеспечение Формирования Точек Роста Инновационной Экономики России // Institutional Support For The Set-Up Of Innovation Economy Growth Points In Russia. *Management Science*.

Pouris, A., & Pouris, A. (2010). Patents and economic development in South Africa: Managing intellectual property rights. *International Conference on Management of Innovation and Technology*. https://doi.org/10.1109/ICMIT.2010.5492924

Pouris, A., & Pouris, A. (2011). Patents and economic development in South Africa: managing intellectual property rights. *South African Journal of Science*. https://doi.org/10.4102/SAJS.V107I11/12.355

Pradhan, K. C. (2023). Examining the Impact of Innovations on Economic Growth in BRICS Countries. *Global Business Review*. https://doi.org/10.1177/09721509231152032

Prud'homme, D., & Taolue, Z. (2017). Evaluation of China's Intellectual Property Regime for Innovation: Summary Report. *Social Science Research Network*.

Rassâa, E., & Abdennebi, H. B. (2018). *Intellectual Property Rights and Innovation in Developing Countries: A Panel Analysis*. https://doi.org/10.20472/EFC.2018.010.028

Rehman, F. U., & Islam, Md. M. (2022). Financial infrastructure—total factor productivity (TFP) nexus within the purview of FDI outflow, trade openness, innovation, human capital, and institutional quality: Evidence from BRICS economies. *Applied Economics*. https://doi.org/10.1080/00036846.2022.2094333

Reichman, J. H. (2009). *Intellectual property in the twenty-first Century: will the developing countries lead or follow?*

Reichman, J. H. (n.d.). *Intellectual Property in the Twenty-First Century: Will the Developing Countries Lead or Follow?**. https://doi.org/10.1093/acprof:oso/9780199660759.003.0004

 doi:10.20944/preprints202510.0796.v1

Reis, M. R. dos. (2024). TRIPS and the right to human health: A case study on Brazil's health policies and their implications. *The Journal of World Intellectual Property*. https://doi.org/10.1111/jwip.12321

Savin, S. V., & Murzin, A. D. (n.d.). *Problems of development of intellectual property and innova¬tions in Russia*. https://doi.org/10.25198/2077-7175-2023-5-69

Serrano, O. (2016). China and India's insertion in the intellectual property rights regime: sustaining or disrupting the rules? *New Political Economy*. https://doi.org/10.1080/13563467.2016.1113950

Shelepov, A. (2015). BRICS and International Institutions: Models of Engagement in Global Governance. *International Organisations Research Journal*.

Sidorova, E. (2018). The Innovation Development of the BRICS Countries: Preconditions and Prospects for Cooperation. *International Organisations Research Journal*. https://doi.org/10.17323/1996-7845-2018-01-02

Tabatchnaia-Tamirisa, N. (1996). Protection of Intellectual Property Rights in a Transition Economy.*Research Papers in Economics*.

Tamirisa, N. (1996). Protection of Intellectual Property Rights in a Transition Economy.*Research Papers in Economics*.

Tanaka, H., & Iwaisako, T. (2013). Intellectual Property Rights and Foreign Direct Investment: A Welfare Analysis. *Research Papers in Economics*.

Vlados, C., & Chatzinikolaou, D. (2020). BRICS and Global Restructuring: Notes for the Near Future. *Management and Economics Research Journal*. https://doi.org/10.18639/MERJ.2020.1075592

YANG, L., HE, Z., QI, J., & HAN, F. (n.d.). *Intellectual Property Rights Protection, Human Capital, and Economic Growth of Developing Countries*. https://doi.org/10.3969/j.issn.1002-9753.2013.11.014

Yao, Y. (2024). Intellectual Property Law in the Digital Economy Era: New Challenges and Countermeasures. *International Journal of Global Economics and Management*. https://doi.org/10.62051/ijgem.v3n3.08

Yi, X., & Naghavi, A. (2017). Intellectual property rights, FDI, and technological development. *Journal of International Trade & Economic Development*. https://doi.org/10.1080/09638199.2016.1266380

Yu, P. K. (2008). Access to Medicines, BRICS Alliances, and Collective Action. *Social Science Research Network*.

Korneeva, E., Skornichenko, N., Shamakova, N., & Freze, T. (2024). Sustainable energy development through BRICS cooperation in technology and innovations.*E3S Web of Conferences*. https://doi.org/10.1051/e3sconf/202459203012