

Review

Reconstructing IP office governance dynamically: A literature study

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Abstract: Intellectual property (IP) is a crucial issue as it directly impacts economic growth. This research analyzed the dynamic governance reconstruction within Indonesia's Ministry of Law and Human Rights aimed at transforming it into a world-class Intellectual Property Office (IPO). A systematic review of 20 articles was conducted. The results showed that the Directorate General of Intellectual Property (DGIP) under the Ministry has numerous opportunities to become a world-class IPO. Protecting intellectual works through IP rights enhances inclusiveness, such as ensuring operational freedoms. The Indonesian government is employing dynamic governance methods to contextualize and implement bureaucratic reforms. However, there is resistance to change as old habits conflict with the new order, posing a challenge to bureaucratic reform. Strategies to create a world-class IPO involve improving technology utilization and fostering innovation. The protection of IP rights has widened inclusivity by enabling operational freedoms. Under dynamic governance, the bureaucracy is being restructured to be more context-aware and agile in its execution. Yet, ingrained practices resist reform, creating friction with the new systems being instituted. Initiatives to elevate the DGIP include technological modernization and promoting a more innovative culture. By reviewing these aspects systematically, the research provides insights into the opportunities and challenges in transforming Indonesia's IP office into a world-class institution capable of driving economic growth through robust IP governance.

Keywords: intellectual property; dynamic governance; bureaucratic reform; world-class office; economic growth

1. Introduction

In the globalization age, the strength of ideas outweighs material wealth and power. Bright ideas articulated through creative creations, creativity, and designs significantly impact people's lives (Hariyani et al., 2020). Intellectual Property (IP) refers to inventions, innovations, and new designs for preserving and valuing human creativity. In addition, IP is a right resulting from the outcomes of ideas for creating a product or process. This concept is prioritized by countries to protect work in society (Ronie et al., 2023). Currently, IP is a significant issue since the concept affects economic growth. Intellectual property rights (IPR) are weaker in developing countries, where investment in creative efforts is inadequate. In this context, external innovations are duplicated more than in developed countries since the significance of IPR is understood in innovative practices (Neves et al., 2021). Moreover, IP management is the task and function of the Ministry of Law and Human Rights through the Directorate General of Intellectual Property (DJKI), also known as the Intellectual Property Office (IPO). The dynamic capabilities of DJKI in managing IP policies influence innovation and economic growth of Indonesia.

According to the World Intellectual Property Organization (WIPO), the innovation ranking of Indonesia continues to improve but has not entered the top 10 on a global scale. To achieve the mission of becoming a world-class IPO, DJKI faces the following challenges.

- a. The problem of economic growth related to IP and the role of DJKI as an IPO managing intellectual property governance.
- b. The implementation of seven elements defined by WIPO to measure a country's level of innovation has not been fully optimized.

To address these challenges and enhance the dynamic capabilities, DJKI needs to leverage collaboration with the private sector, civil society, and the public to reconstruct dynamic governance towards becoming a world-class IPO. Therefore, an assessment of dynamic capabilities based on the seven elements is needed to identify areas for improvement and policy recommendations.

2. Materials and methods

The systematic literature review (SLR) method explains the research results published in journals and obtains new novelty (Mengist et al., 2020). SLR is a methodology used to conduct specific analyses to collect and evaluate research related to a particular topic (Mohamed Shaffril et al., 2020). A systematic review can be achieved through SLR method, and every journal or scientific work related to a research topic can be identified.

SLR is created by following established and evidence-based steps or protocols. The method considers the results and is not subjective in the identification of the journal. SLR identifies, examines, evaluates, and interprets all research from various sources obtained from the field of topics that are factual problems (Azarian et al., 2023).

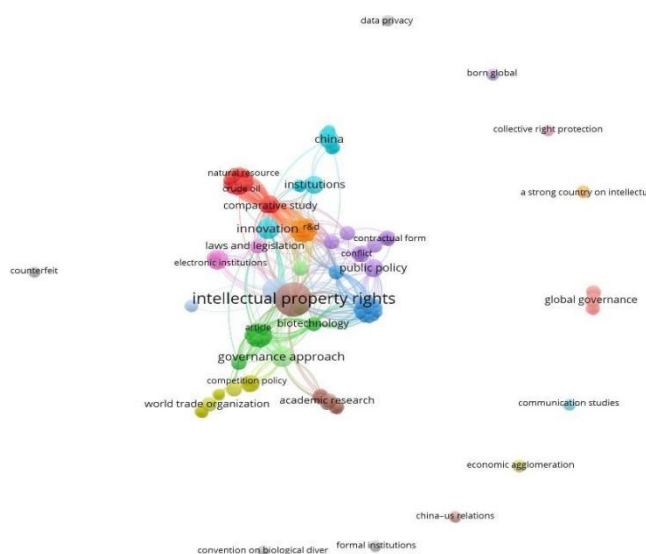


Figure 1. Initial network visualization of 1412 article.

Visualization is conducted using the Vosviewer tool by searching reputable international journal databases. Vosviewer is a software tool for constructing and visualizing bibliometric networks (Eck and Waltman, 2018). After visualization, the

research continued with mapping and analyzing articles using SLR method. The literature review is designed to find, evaluate, and synthesize previous research related to a specific question to provide an informative and evidence-based answer (Boland et al., 2017).

The first step in searching for journal articles was entering the keyword “Intellectual Property Right” in the column. Based on the Scopus database, 1412 documents discussing IPR globally were obtained. The consideration in entering IPR as the first single keyword in the search process was to obtain the trends of topics globally analyzed. This was used to determine the novelty element of the research topic. **Figure 1** shows the visualization of 1412 journal article documents.

In the second step, the keyword “Intellectual Property Right AND Dynamic Capabilities” was entered into the search domain. The consideration was to determine the correlation of dynamic capabilities with IPR. The search results based on the Scopus database showed that 16 documents examined IPR and dynamic capability (**Figure 2**).

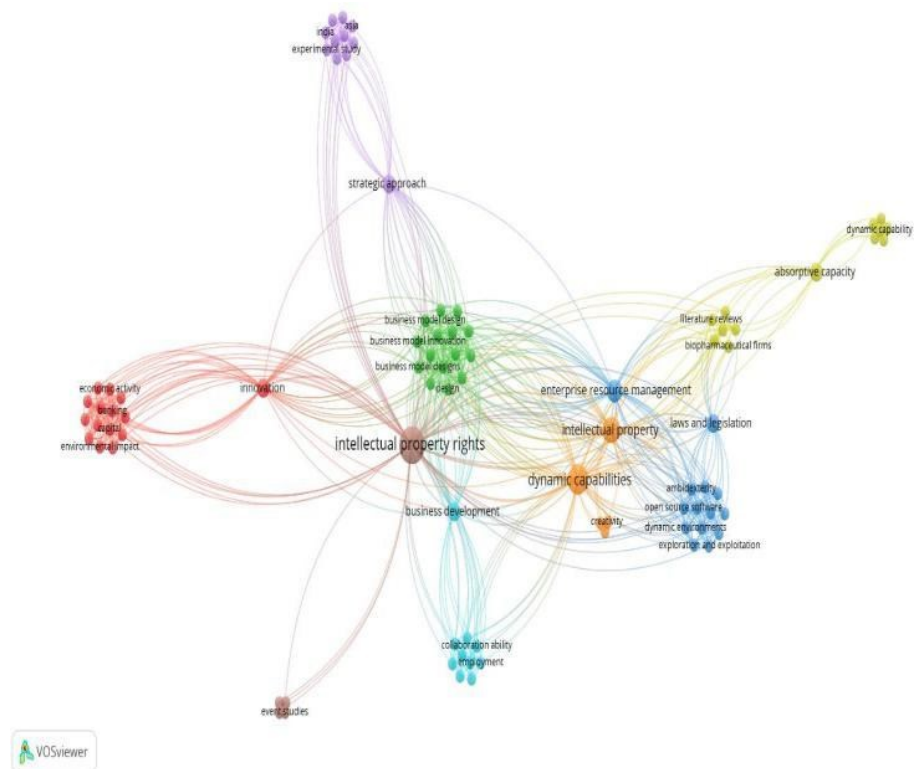


Figure 2. Initial network visualization of 16 article.

The third step is looking for journal articles with the keyword “Dynamic Governance” in correlation with IPR. The object of this research is a government institution, and the development of publications on dynamic governance should be determined globally (**Figure 3**).

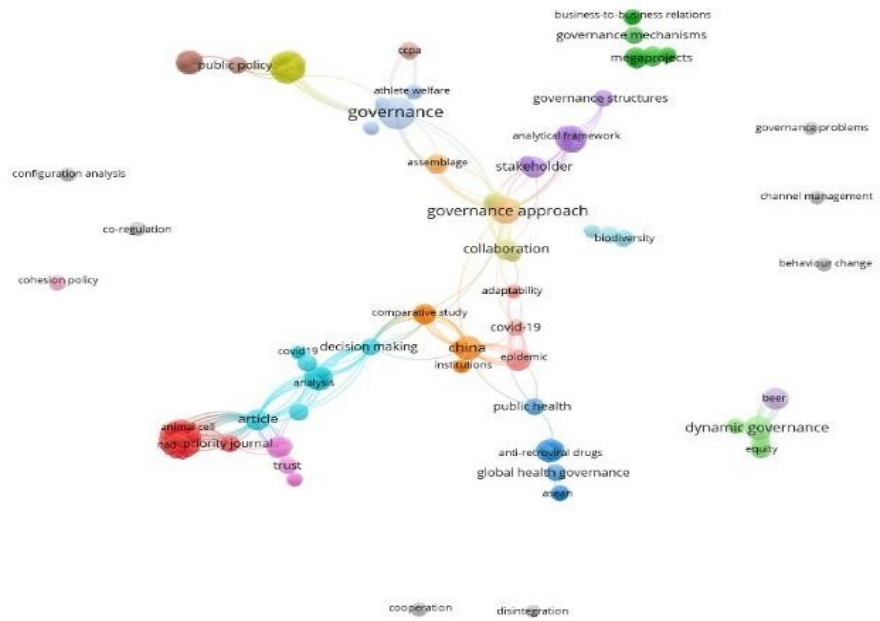


Figure 3. Initial network visualization.

In the fourth step, the search for journal articles relevant to the topic was pursued by entering three keywords, namely “Governance and Institution, as well as Intellectual Property Rights.” The consideration of selecting the keywords Governance and Institution is because the two terms are the conceptual foundation of dynamic governance theory. Based on the Scopus database, 20 corresponding documents were obtained and visualized, as shown in Figure 4.

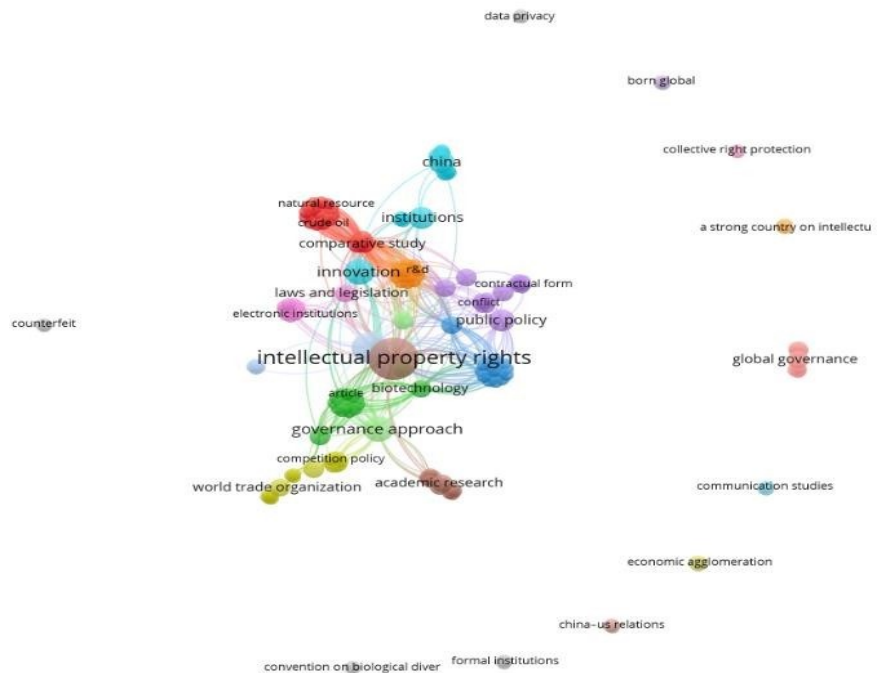


Figure 4. Initial network visualization of 20 article.

The keywords “dynamic governance through world-class intellectual property” were used to search for publications on Scopus, Crossref, and Google. Meanwhile, the journals or papers that meet the inclusion and exclusion criteria were selected and

recorded for analysis. The review used material produced between 2014 to 2024 available in full text or pdf format.

Reviewed publications met particular criteria, such as the necessity for English articles on the Ministry of Law and Human Rights subject. The selected articles were examined to ensure the unique characteristics and inclusion criteria were met. In addition, the core theme was dynamic governance through world-class IPO. The criteria for selecting an article for review included journals exploring dynamic governance's impact (**Table 1**).

Table 1. Study inclusion criteria.

Criteria	Inclusion
Time	The period of the journal publication of the last ten years (2014–2024)
Language	English
Content Theme	Dynamic governance through world-class intellectual property
Subject	Ministry of Law and Human Rights
Types of journals	Reputable International Journals (Scopus indexed)

The synthesis in this research review used the narrative technique, collecting the data to identify consistent and significant results to address the objectives. Subsequently, the journal articles related to the acceptance requirements are compiled and summarized, including the analyst's name, year of publication, country of study, title, techniques, and findings. The study summary is included in the table and shown alphabetically with the year of publication. To explain an abstract and a full-text analysis, scientific papers and journals must be thoroughly examined. Based on the summary, an analysis of the study objectives and results is conducted. Subsequently, the journal under evaluation is coded with dynamic governance through intellectual property. Comparisons and distinctions are recognized and examined to reach definitive conclusions.

Selection Criteria are obtained by determining two criteria as follows:

- 1) Inclusion Criteria
 - (1) Possessing the concept of Dynamic Governance Reconstruction toward world-class intellectual property.
 - (2) Reach for subjects of government.
 - (3) There are appropriate dimensions/indicator variables.
 - (4) Deadline: for journals of the last ten years.
- 2) Exclusion Criteria
 - (1) Outside the concept of Dynamic Governance Reconstruction intellectual property.
 - (2) Above ten years.
 - (3) Absence of full text available.

A comprehensive investigation on Google Scholar, Ebsco, and Crossref using the keywords “dynamic governance” and “intellectual property” shows the article search strategy in **Figure 5**.

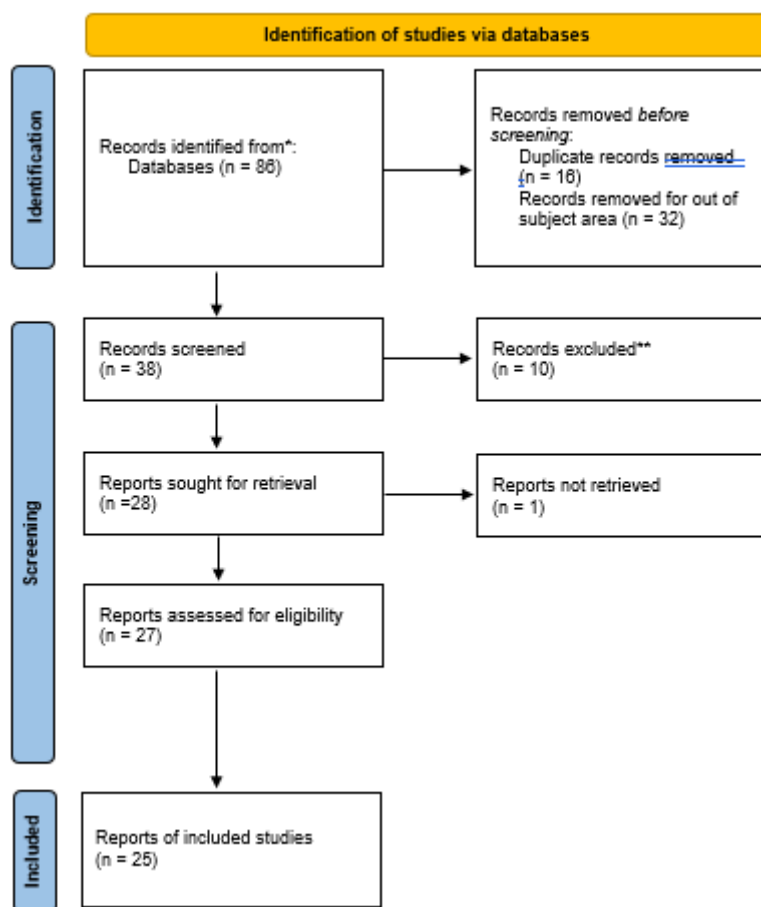


Figure 5. Prisma flow diagram.

3. Results and discussion

The search results for keywords connected to intellectual property variables reported 20 relevant publications, which are as follows (Table 2):

Table 2. Summary article reviewed.

No	Reference	Method	Research result
1.	(Fang et al., 2017)	Quantitative	Innovation increases dramatically after firms are privatized, particularly in large cities with high IPR protection. These data substantially corroborate Schumpeter’s idea that institutions are crucial.
2.	(Dixit et al., 2018)	Systematic literature review	The public sector must authorize and support additional research and development (R&D) infrastructure, establish a corporate licensing system, and streamline regulatory systems. Meanwhile, businesses must advance the R&D structure, ensure quality, and expand expert experience to increase total health facility growth.
3.	(Sitaloppi and Ballardini, 2023)	Systematic literature review	<ol style="list-style-type: none"> 1. Shifting the theoretical foundation of IPR away from private ownership and profit maximization and toward societal planning and distributive justice is required. 2. The IPR set must be changed from private to distributive rather than domination or polarization. 3. There is no reason to limit the exchange of IPR among collaborating entities and motivate open knowledge sharing.

Table 2. (Continued).

No	Reference	Method	Research result
4.	(Suominen et al., 2023)	Delphi method	<p>1) The system is unevenly dispersed (polarized) and needs to be more inclusive.</p> <p>2) Other ministries with opposing perspectives are excluded, resulting in a shortage of knowledgeable individuals.</p> <p>3) Insufficient financing for research on IP and protection for universities and research institutes.</p> <p>4) Limiting IPR to patents and paying little attention to copyrights, even though the electronic creative ecosystem is growing.</p>
5.	(Brandl et al., 2019)	Quantitative	<p>AMNE develops local innovation systems and adopts global institutional environmental norms. Individual businesses also gain from these operations in the long and near term, even though IP protection obligations remain minimal. In addition, external forces and facilitators frequently increase subnational IPR standards to protect development standards. Research suggests that interstate accords should be limited in scope due to the tendency to prioritize national interests.</p>
6.	(Holgersson et al., 2018)	Phenomonology	<p>This case examines strategic intellectual property management, designation, open innovation, and the dynamics of the innovation ecosystem. Different technology generations indicate advancements in an innovation ecosystem with cooperative and competitive ties. Innovation ecosystems are structured hybrid integrated with corporate systems and disaggregated market organizations. In addition, standards can be set by pure market procedures, de facto standards, management methods, and managed standards.</p>
7.	(Sweet and Eterovic Maggio, 2015)	Quantitative	<p>The regression results show a favorable association between IPR strength and economic complexity. However, countries with lower median incomes did not produce meaningful results. A positive association was discovered between IPR and economic complexity when interacting with human capital levels. Strong standards only affect economic complexity when human resources remain low, as opposed to countries with abundant people resources.</p>
8.	(Barbic et al., 2016)	Case study	<p>The application of governance systems in multi-partner alliances varies by alliance phase. Relational governance is critical during the discovery and development phases. Meanwhile, contractual governance must be prioritized in the development and finalization stages. The outcomes continue to support the perspective of complementary governance structures.</p>
9.	(Ruangpermpool et al., 2020)	Case study	<p>In government, formal and informal control methods are complementary. Informal trust creates a foundation for goodwill, while formal restrictions are understood as guidelines or commitments. The control method must be adopted to transform joint research into commercial products successfully.</p>
10.	(de Almeida Borges et al., 2020)	Quantitative	<p>The national innovation system and the triple helix concept depict interactions among the actors responsible for technology generation. Brazil's national perspectives show that certain variables have the potential to influence and produce large-scale effects. In the system, the function of the triple helix is understood when the components act as governments through laws.</p>
11.	(Haim Faridian and Neubaum, 2021)	Systematic literature review	<p>Managing IPR on knowledge assets in open networks can facilitate innovation monetization in a variety of ways, including 1) preventing possible information duplication, 2) allowing companies to derive value from the innovation they create, and 3) allowing for the cultivation of value without limiting the creation of shared value, which is an inherent feature of open innovation. This research broadens the breadth of dynamic capabilities by including a network perspective.</p>
12.	(Jiang et al., 2023)	Quantitative	<p>1. The Intellectual Property Demonstration City (IPDC) policy significantly reduces carbon emissions.</p> <p>2. IPDC policy on carbon emissions varies over time and across regions.</p> <p>3. IPDC policies can help reduce carbon emissions by encouraging innovation and green innovation and boosting R&D agglomeration features.</p>
13.	(Natsir et al., 2023)	Qualitative	<p>Dynamic governance has two elements that positively and significantly impact public service innovation.</p>

Table 2. (Continued).

No	Reference	Method	Research result
14.	(Widowati et al., 2023)	Literature review	The Indonesian government has used a dynamic governance method to contextualize and execute bureaucracy. However, there is a reluctance to change, where the old habits and new orders pose a challenge to bureaucratic reform.
15.	(Usman et al., 2024)	Phenomenology	Dynamic governance successfully streamlines the application of good principles. This impacts policymaking in a way consistent with development objectives and enhances the resilience of the creative industry.
16.	(Jeddawi et al., 2023)	Qualitative	The Ministry of Law and Human Rights Directorate General of IPR has strengthened the implementation of IPR services, as reported in the ongoing digital transition. The reconstruction model is NOFLI (Needs, Opportunity, Future, Leadership, Intelligence).
17.	(Tang and Liu, 2024)	Quantitative	In locations with strong IP protection, the Pretax Additional Deduction (PAD) legislation increases corporate innovation output and reinforces innovation objectives. To promote innovation, the government must emphasize strong IP protection.
18.	(Viglioni et al., 2024)	Quantitative	Causality research shows that foreign direct investment (FDI) causes long-term CO ₂ emissions, reinforcing IPR regulations. In G20 member countries, policymakers must enhance IPR rules and promote clean technology through FDI.
19.	(Kurniawan et al., 2023)	Qualitative	Coordination and collaboration are critical elements of multilevel dynamic governance.
20.	(Ferdinands et al., 2023)	Quantitative	The correlation between academic support, industry backing, and patent commercial success could be better. Each helix contains two different support standards for the two ownership groups. These results show the importance of a solid support structure facilitating each patent owner's development in economic value.
21.	(Prud'homme et al., 2021)	Literature review	IPR institutions will continue to differ among nations in ways that affect multinational corporations even though there has been significant convergence in some areas. This is because stakeholder procedures are difficult to manage. We further show that the most direct explanation for the development of IPR institutions comes from the third stakeholder-based view micro-process, which is the assessment of stakeholders' salience.
22.	(Meroño et al., 2020)	Mix methods	In Latin America and Iberia, women have a crucial role in IP. But in order to bridge this gap, appropriate rules and incentives will be needed, as their accomplishments are still not well recognized.
23.	(Audretsch and Belitski, 2020)	Quantitative	While R&D is crucial for productivity and innovation, knowledge spillovers have a greater impact on business productivity than R&D.
24.	(Lähteenmäki-Uutela et al., 2021)	Literature review	Compensations may be necessary if laws severely restrict property rights or if the administrative branch fails to live up to reasonable expectations. Powerful businesses suing them for property rights and citizens suing them for environmental rights may lead to a two-front legal struggle that all governments pushing transformations would have to deal with. To take environmental concerns into account, courts and tribunals need to rewrite trade and investment laws as well as property laws.
25.	(Zazyki et al., 2022)	Literature review	Due to its complexity and multifaceted nature, the notion of property rights can have unclear implications. This may be the reason why there are indications of both the influence and lack thereof of property rights on economic development.

Twenty-five articles were examined in total. Eight papers employed the quantitative approach, nine articles the literature review technique, one article the Delphi method, two articles the phenomenology method, two articles the case study method, and one article the mix methods method. A thorough examination is provided by the many approaches that were selected for study. The qualitative method can lead to the generation of fresh theories, concepts, and discoveries. In order to generalize

the study's findings, it frequently focuses on the conclusions drawn from events that occurred in a given setting at a specific moment, ignoring any future ramifications and outcomes. Quantitative approaches are techniques for assessing social reality that use targeted queries to produce numerical data for these particular purposes. However, a literature review offers a clear, impartial, and comprehensive summary of the body of knowledge already known about a study question.

4. Discussion

4.1. Implementation of intellectual property rights

The growth of services in connection with the development of digitization has become a prerequisite for service recipients and suppliers. The DJKI of the Ministry of Law and Human Rights provides the best service (Jeddawi et al., 2023). In this context, the regression results show a favorable association between IPR strength and economic complexity. A positive association was also discovered between IPR and economic complexity when interacting with human capital levels. Strong IPR standards only affect economic complexity when human resources remain low (Sweet and Eterovic Maggio, 2015).

The DJKI of the Ministry of Law and Human Rights has numerous chances to create a world-class IPO. In Indonesia, society has a favorable tendency toward keeping and broadening possibilities to safeguard IP (Jeddawi et al., 2023). To improve IPR system, it is critical to understand the principle of protection, such as the effect on freedom of operation (Suominen et al., 2023). Meanwhile, coordination and collaboration are critical elements of multilevel dynamic governance (Kurniawan et al., 2023). Holistic collaboration facilitates the invention and scaling up of systems to incorporate several interrelated technologies and relies on the inputs of actors with complementary skills and know-how (Sitaloppi and Ballardini, 2023). As a country with an intense dedication to intellectual property protection, Indonesia has been engaged in IPR frameworks at regional and worldwide levels. International cooperation is integral to the Indonesian IP system (Jeddawi et al., 2023).

The application of governance systems in multi-partner alliances varies by phase. In this context, relational governance is critical during the discovery and development phases. Meanwhile, contractual governance must be prioritized during the development and finalization stages (Barbic et al., 2016). Examine the various legal systems' interpretations of property rights by various governments (Macaulay, 2020). Common law and civil law nations, for instance, may hold different perspectives regarding the ownership and use of property (Singer et al., 2021). Moreover, integrate data on public opinion to determine how people view property rights and its upholding. This can highlight differences in cultural attitudes and legal systems, as polls on land ownership (Ferree et al., 2023).

Dynamic governance improves the effectiveness and performance of the government (Natsir et al., 2023). The concept successfully streamlines the application of sound principles, which impacts policymaking in line with development objectives and enhances the resilience of the creative industry (Usman et al., 2024). The Indonesian government has used a dynamic governance method to contextualize and execute bureaucracy. However, there is a reluctance to change since old habits and

new orders pose a challenge to bureaucratic reform (Widowati et al., 2023). In government, formal and informal control methods are complementary. Informal trust creates a foundation for goodwill, while formal restrictions are understood as guidelines or commitments. The control techniques must be adopted to transform joint research into commercial products (Ruangpermpool et al., 2020).

Due to its complexity and multifaceted nature, property rights can have unclear implications. This may be why there are indications of both the influence and lack thereof of property rights on economic development (Zazyki et al., 2022). Dynamic governance can practically be applied to infrastructure and economic development policies. Among the principal indicators noted are (Usman et al., 2024):

- 1) The effectiveness of bureaucracy. Good governance techniques can streamline the bureaucratic procedures associated with the creative industries. The Industry Office's integration of licensing services is one glaring illustration of how this strategy streamlines administrative requirements and expedites the licensing process.
- 2) Business Ease of Transaction. The goal of effective governance is to create a more hospitable environment. A supportive environment for business operations is created by initiatives like streamlining rules and deploying IT for licensing services.
- 3) Accountability and Transparency. Appropriate governance procedures encourage accountability and openness in decision-making. Participating in the policy-making process allows various parties to contribute ideas and gain a deeper understanding.
- 4) Engagement of Stakeholders. Several stakeholders can participate more easily when there are good governance practices in place. Incorporating stakeholders from the sector and the general public enhances inclusivity in policy development and program execution.
- 5) A rise in rivalry. The creative industries are becoming more competitive, and this is supported by the integration of good governance principles. This industry's ability to adapt to change and fortify its competitive foundation aids in its ability to compete on the international stage.

The concept of gender harmony is perpetuated by complex sociocultural and institutional factors that contribute to the subjugation of women in Indonesia. Other issues that limit women's participation in innovation include the invisibility of their contributions and their limited influence in decision-making processes (Valerio et al., 2024). In Latin America and Iberia, women have a crucial role in IP. In Latin America and Iberia, women have a crucial role in IP. However, their accomplishments are still hardly evident (Meroño et al., 2020). In order to advance gender equality and improve rural well-being in Indonesia, instituting gender-transformative policies and completely changing institutional and policy approaches to women's empowerment.

The findings are applicable internationally and in other nations. The effects of IP regulation may differ throughout nations with differing economic development stages. IPR institutions will continue to differ among nations in ways that will affect multinational corporations, even though there has been significant convergence in some areas. Stakeholder procedures are challenging to manage (Prud'homme et al., 2021). The effects of IP governance frequently differ throughout industries.

Examining foreign sectors like technology, agriculture, or pharmaceuticals might show how IP regimes can be tailored to specific economic activity, similar to what was seen in Indonesia.

4.2. The strategy to create a world-class IPO

IPR protection is significant for the efficacy of tax incentive systems. Corporations planning to engage in actual innovation activities may use a tax incentive scheme as a channel for tax avoidance, reducing the policy's efficacy with sufficient IP protection. Several countries have widely used policies rewarding R&D through tax credits to stimulate corporate innovation (Tang and Liu, 2024). High R&D costs, research diversification, regulatory methods, geographical growth, IP portfolio management, translation mechanisms, as well as multidisciplinary collaboration should be promoted to address disruptive events such as shifts in patent laws. The development of new technologies should also be prioritized to complement stakeholders' efforts (Dixit et al., 2018). Different technology generations show advancements in an innovation ecosystem with cooperative and competitive ties among actors (Holgersson et al., 2018). A framework must be built for scaling up and translating undervalued and underused indigenous innovations to reduce development costs and eliminate redundant efforts (Dixit et al., 2018).

The author attempts to compare Brazil and Indonesia, two countries with disparate innovation metrics. According to the World Intellectual Property Organization (WIPO), the innovation ranking of Indonesia ranks 61st and Brazil 49th on a global scale. Since copyright does not necessitate registration, copyright regimes are more deterrent to registering designs. In Brazil, China, and the EU, the European Union Intellectual Property Office (EUIPO) and patent expert member states of the EU only check the formality of industrial designs; in contrast, India, Indonesia, Japan, Korea, Russia, and the U.S. register them after experts review their novelty and other requirements. Launched in 2003, the European Community design registration system is predicated on the idea of a "design approach," which emphasizes the industrial designs' market value (Jemala, 2022). National innovation system and triple helix concept show interactions among the actors responsible for technology generation. The function of the triple helix can be understood when the components act as governments through laws in Brazil (de Almeida Borges et al., 2020). The examination of IP governance is enhanced by combining Brazil's and Indonesia's experiences since they present a range of issues and solutions encountered by developing nations. The study can make important findings about the significance of customized reforms that take local circumstances and international norms into account, as well as the role that context plays in forming successful IP policies, by looking at these two nations together. In the end, this comparative method improves our comprehension of how other nations might forge their own routes toward strong intellectual property administration.

Innovation increases after SOE privatizations, which is more significant in cities with IPR protection. Moreover, the protection increases the incentives to develop, and businesses in the private sector are more cognizant of the concept (Fang et al., 2017). Innovation ecosystems are also structured as a hybrid integrated with corporate

systems and disaggregated market organizations. In this context, standards can be set by pure market procedures, de facto standards, management methods, and standards (Holgersson et al., 2018). The management of IPR on knowledge assets in open networks facilitates innovation monetization by 1) preventing possible duplication, 2) permitting the derivation of value from innovation, and 3) preventing the limitation of shared value (Haim Faridian and Neubaum, 2021).

Investment in research and development (R&D) is widely acknowledged as one of the key components in creating a competitive advantage for modern businesses (Ravšelj and Aristovnik, 2020). R&D is crucial for productivity and innovation, knowledge spillovers have a greater impact on business productivity than R&D (Audretsch and Belitski, 2020).

5. Conclusion

In conclusion, numerous chances were reported for creating a world-class IPO. The working principle of IPR protection, such as the effects of the variable on freedom of operation was considered in improving the system. The Indonesian government also used a dynamic governance method to contextualize and execute bureaucracy. Bureaucratic efficiency, commercial transaction ease, accountability and transparency, stakeholder engagement, and a growth in rivalry are all indicators that can be used to ensure that dynamic governance influences the economy. However, there was a reluctance to change since old habits and new orders posed a challenge to bureaucratic reform. It is possible to use indicators such as bureaucracy's efficacy, business ease of transaction, accountability and transparency, stakeholder engagement, and a growth in rivalry to make sure dynamic governance has an influence on the economy. The strategies to create a world-class IPO were to improve technology and increase innovation. The implication of a world-class IP system is innovation, societal advancement, and economic vibrancy. Creating a climate that upholds human rights and encourages innovation might help nations become more globally competitive while simultaneously advancing sustainable development and cultural enrichment. Maintaining a balance between access and protection is still essential to maximizing the advantages of a robust intellectual property system for all parties involved.

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