

Intellectual Property Rights and Global Innovation Performance: A Secondary-Data Assessment of Patent, Trademark and Design Activity

Sofia Lindqvist¹, Daniel K. Mensah², Amélie Fournier³

¹ Centre for Digital Economy and Innovation, Nordic
Metropolitan University, Stockholm, Sweden

² Department of Economics and Technology Management,
Ashford International University, Accra, Ghana

³ Faculty of Law and Technology, Institut Européen de Gouvernance, Lyon, France

Submission: 02/03/2026 Acceptance: 23/05/2026 Publication: 20/08/2026

Abstract

Intellectual property rights constitute an important institutional mechanism through which knowledge, creativity and technological innovation are converted into economically and socially valuable assets. The increasing internationalization of innovation has simultaneously expanded the importance of patents, trademarks and industrial designs while creating substantial differences in intellectual property activity across jurisdictions. This study examines global intellectual property activity through a secondary-data analysis of patent, trademark and industrial-design filing patterns. The research uses publicly available statistics published by the World Intellectual Property Organization (WIPO), with particular emphasis on comparative filing activity, geographical concentration, temporal changes and differences among major intellectual property jurisdictions. The analysis covers selected indicators for 2022–2024 and incorporates supplementary observations concerning international patent activity through the Patent Cooperation Treaty system. Descriptive statistical analysis is employed to identify patterns, growth rates and concentration within global intellectual property activity.

The findings demonstrate that global intellectual property activity is characterized by both substantial expansion and pronounced geographical concentration. Global patent applications increased from approximately 3.55 million in 2023 to approximately 3.73 million in 2024, representing growth of 4.9%. Trademark applications, measured through application class counts, remained broadly stable at approximately 15.2 million classes, whereas industrial-design filings increased by approximately 2.2%. Asian intellectual property offices accounted for approximately 70.1% of global patent applications in 2024, illustrating the increasing centrality of Asian economies in global innovation systems. China remained the dominant source and destination of intellectual property activity across several categories, while the United States, Japan, the Republic of Korea, Germany and other advanced innovation economies continued to occupy important positions. The study argues that intellectual

property systems should not be evaluated exclusively according to aggregate filing volumes. Rather, policymakers should consider the interaction between intellectual property institutions, technological specialization, commercialization capacity, internationalization and institutional quality. The paper contributes to the literature by presenting an integrated secondary-data perspective on multiple forms of intellectual property and by highlighting the growing geographical reconfiguration of global innovation activity.

Keywords: intellectual property rights; patents; trademarks; industrial designs; innovation; WIPO; secondary data; global innovation; technology policy

1. Introduction

Intellectual property (IP) has become an increasingly important component of contemporary economic policy, technological development and international competition. The transformation of knowledge into commercially valuable products and services has intensified the importance of legal mechanisms capable of defining, protecting and transferring intangible assets. Patents provide legal protection for qualifying inventions, trademarks support the identification and differentiation of goods and services, and industrial designs protect distinctive visual characteristics of products. Although these rights differ substantially in legal purpose and economic function, together they form an important institutional infrastructure for innovation-driven economic activity.

The importance of intellectual property has increased alongside the internationalization of research and development, global value chains, digital transformation and the increasing economic contribution of intangible assets. Firms operating across borders increasingly require mechanisms through which inventions, brands, product designs and technological knowledge can be protected in multiple jurisdictions. Consequently, intellectual property filing activity has become an important indicator of technological and commercial dynamism.

The World Intellectual Property Organization (WIPO) regularly collects and publishes international statistics concerning patents, utility models, trademarks, industrial designs and other intellectual property rights. WIPO describes its intellectual property statistics as an important tool for understanding worldwide trends in policy, business and technology. Its statistical databases draw information from national and regional intellectual property offices and provide historical as well as contemporary information concerning intellectual property activity.

Recent data indicate that global intellectual property activity has continued to evolve despite economic uncertainty, geopolitical tensions and disruptions to international trade. WIPO's World Intellectual Property Indicators 2025 reports that global patent applications reached approximately 3.7 million in 2024, an increase of 4.9% over 2023. Global industrial-design filing activity increased by approximately 2.2%, while

trademark application class counts remained essentially flat at approximately 15.2 million.

These developments raise several important questions. First, is the growth of intellectual property activity evenly distributed across countries and regions? Second, are the different categories of intellectual property developing in similar ways? Third, does a high volume of applications necessarily indicate a stronger innovation ecosystem? Finally, what can secondary intellectual property statistics reveal about the changing geography of global innovation?

The present study addresses these questions by conducting a comparative secondary-data analysis of patent, trademark and industrial-design activity. Rather than focusing on a single country, sector or legal regime, the research adopts a global perspective. The objective is to identify broad patterns and interpret their implications for intellectual property policy, innovation management and international economic development.

The study is particularly relevant because intellectual property statistics are frequently interpreted as straightforward indicators of innovation performance. However, filing numbers are influenced by multiple factors, including market size, industrial structure, institutional arrangements, business strategies, enforcement expectations, filing costs and internationalization strategies. A country with a large number of patent applications may have a substantial technological base, but the number itself does not establish that all patents represent commercially successful inventions. Similarly, trademark filings may reflect entrepreneurial activity and market expansion but can also be affected by branding strategies and administrative filing behavior.

The study therefore takes a cautious approach to interpretation. Filing statistics are treated as indicators of intellectual property activity rather than direct measurements of innovation quality. The analysis combines quantitative descriptive evidence with an institutional interpretation of the observed patterns.

The remainder of the paper is organized as follows. Section 2 reviews the conceptual and theoretical foundations of intellectual property and innovation. Section 3 presents the research methodology and secondary-data sources. Section 4 provides the empirical analysis. Section 5 discusses the findings in relation to innovation policy and intellectual property institutions. Section 6 outlines implications for policymakers, firms and intellectual property organizations. Section 7 discusses limitations, and Section 8 concludes the study.

2. Conceptual Background

2.1 Intellectual Property and Innovation

The relationship between intellectual property and innovation has been widely examined in economics, law, management and public policy. Intellectual property

rights create legally enforceable claims over particular forms of intangible output. From an economic perspective, these rights may reduce uncertainty surrounding investment in research and development by providing innovators with temporary exclusivity or mechanisms for controlling the commercial use of protected assets.

The theoretical justification for patent protection is frequently associated with the problem of appropriability. Innovation often involves substantial fixed costs and uncertain returns, while knowledge can sometimes be imitated or reproduced at a lower cost than the original investment required to develop it. Patent protection can potentially improve appropriability by granting an inventor exclusive rights for a specified period, subject to the relevant legal conditions.

However, the relationship is not necessarily linear. Stronger intellectual property protection may encourage investment in innovation, but excessively broad or strategically deployed rights can potentially increase transaction costs, restrict follow-on innovation or create barriers for smaller firms. The economic effect of intellectual property therefore depends on the institutional and technological environment in which rights operate.

Patents represent one of the most visible indicators of technological activity. Patent applications can indicate research and development intensity, technological ambition and expectations regarding future commercialization. Nevertheless, patents vary considerably in quality, economic value and strategic importance. Consequently, patent counts should be interpreted as measures of patenting activity rather than direct measures of technological success.

2.2 Trademarks and Market-Based Innovation

Trademarks perform a different economic function. Whereas patents generally protect qualifying technological inventions, trademarks distinguish the goods or services of one undertaking from those of others. They therefore play an important role in branding, consumer recognition and market differentiation.

Trademark activity can provide information about entrepreneurial and commercial dynamics. Companies expanding into new markets may seek trademark protection to establish or protect brand identity. The growth of digital commerce has also increased the importance of brand protection because products and services can reach international consumers without requiring conventional physical distribution channels.

Nevertheless, trademark filing numbers should not be interpreted exclusively as indicators of innovation. A firm can be highly active in trademark registration without undertaking significant technological research. Trademark statistics are therefore particularly useful when interpreted alongside patents, designs and broader indicators of business activity.

2.3 Industrial Designs and Product Differentiation

Industrial designs occupy an intermediate position between legal protection, innovation and market differentiation. Design protection focuses on the visual characteristics of products and can therefore be particularly important in industries in which appearance, usability and consumer perception influence purchasing decisions. The growth of design filings is relevant to contemporary innovation systems because competition increasingly occurs not only through technical functionality but also through product appearance, interface design, packaging and user experience. WIPO data indicate that industrial-design activity has continued to expand globally, although the geographical distribution is highly concentrated.

2.4 Internationalization of Intellectual Property

The internationalization of intellectual property has become increasingly important as firms expand their operations across national borders. International filing systems can reduce some administrative burdens associated with seeking protection in multiple jurisdictions. The Patent Cooperation Treaty (PCT), for example, provides an international patent application mechanism.

Recent WIPO statistics show that applicants from China, the United States, Japan, the Republic of Korea and Germany have been among the leading users of the PCT system. In 2025, 275,900 PCT international applications were filed worldwide, representing an increase of 0.7% over 2024.

This international dimension suggests that domestic filing activity and international filing activity should not necessarily be treated as interchangeable. Domestic filings can reflect the scale and sophistication of national innovation systems, whereas international filings may additionally indicate expectations concerning foreign markets and international commercialization.

3. Research Objectives

The study has four principal objectives.

First, it seeks to examine recent global trends in patent, trademark and industrial-design filing activity.

Second, it aims to identify the geographical concentration of intellectual property activity among major countries and regions.

Third, it compares the development of different intellectual property categories in order to determine whether global IP activity demonstrates similar or divergent patterns.

Fourth, it evaluates the implications of these trends for innovation policy and intellectual property governance.

Based on these objectives, the study addresses the following research questions:

RQ1: What major changes have occurred in global patent, trademark and industrial-design activity?

RQ2: To what extent is global intellectual property activity geographically concentrated?

RQ3: How do patterns differ across patents, trademarks and industrial designs?

RQ4: What implications do these patterns have for innovation policy and intellectual property governance?

4. Methodology

4.1 Research Design

The study employs a quantitative descriptive research design based entirely on secondary data. No primary survey, interview or experiment was conducted. The analysis is therefore intended to identify macro-level patterns rather than establish causal relationships.

Secondary-data research is particularly appropriate for the present study because intellectual property offices and international organizations collect extensive administrative statistics covering large numbers of applications and registrations. These data provide a broader geographical and temporal coverage than would normally be achievable through primary data collection.

4.2 Data Sources

The principal source is the World Intellectual Property Organization's intellectual property statistics and World Intellectual Property Indicators publications. WIPO's statistical resources cover patents, utility models, trademarks, industrial designs, plant varieties, geographical indications and other intellectual property indicators.

The analysis primarily uses data relating to 2022–2024, with additional international patent observations where appropriate. WIPO's 2025 indicators provide 2024 filing statistics for patents, trademarks and industrial designs.

The data are administrative statistics rather than estimates generated through a survey. This is an important strength because the underlying figures are based on reported activity at national and regional intellectual property offices.

4.3 Variables

The principal variables examined in the study are:

1. Patent applications.
2. Trademark application class counts.
3. Industrial-design application counts.
4. Growth rates.
5. Regional shares of global filings.
6. International patent applications under the PCT system.

The analysis focuses on filing activity rather than registrations or rights in force because applications provide a relatively timely indicator of intellectual property demand.

4.4 Analytical Approach

The study uses descriptive statistics, percentage changes and comparative analysis. Growth rates are interpreted according to the following general formula:

$$\text{Growth Rate (\%)} = [(\text{Current Year Value} - \text{Previous Year Value}) / \text{Previous Year Value}] \times 100$$

Because different intellectual property rights are measured differently, direct comparisons of absolute volumes across patents, trademarks and designs are avoided. In particular, WIPO notes that trademark statistics are commonly presented using application class counts, while industrial-design statistics may use design counts.

5. Results

5.1 Global Intellectual Property Filing Activity

The first finding concerns the overall scale of global intellectual property activity. WIPO data show that 2024 witnessed growth in patents and industrial designs, while trademark activity remained approximately stable.

Table 1. Global Intellectual Property Filing Activity, 2023–2024

Intellectual Property Right	2023	2024	Change
Patent applications	3,552,300	3,725,000	+4.9%
Trademark application class counts	15,249,000	15,228,300	–0.1%
Industrial-design application/ design counts	1,525,600	1,559,400	+2.2%
Utility-model applications	3,128,050	3,254,270	+4.0%

Source: Compiled from WIPO, *World Intellectual Property Indicators 2025* and WIPO IP Facts and Figures.

The figures indicate that patent activity experienced the strongest percentage growth among the three major categories examined, increasing by 4.9%. Industrial-design activity also increased, although at a lower rate. Trademark filing activity was essentially unchanged.

The results indicate that technological intellectual property continued to expand in 2024. The growth in patent applications is particularly significant because it represents the fifth consecutive year of global patenting growth according to WIPO.

The stability of trademark filing activity contrasts with the growth observed in patents and designs. This divergence suggests that different intellectual property rights respond differently to economic and commercial conditions.

5.2 Geographical Distribution of Patent Activity

Patent activity is strongly concentrated geographically. WIPO data indicate that Asian offices accounted for approximately 70.1% of worldwide patent applications in 2024, compared with approximately 60% in 2014.

Table 2. Leading Patent-Origin Economies, 2024

Rank	Country	Patent Applications
1	China	1,796,738
2	United States	503,271
3	Japan	420,991
4	Republic of Korea	296,037
5	Germany	133,784
6	India	76,470
7	France	51,880
8	United Kingdom	46,837
9	Switzerland	41,341
10	Netherlands	26,444

Source: WIPO Statistics Database, 2026 update.

China occupies a particularly distinctive position. Applicants based in China filed approximately 1.8 million patent applications worldwide in 2024, substantially exceeding the number filed by applicants based in the United States, Japan or other major economies.

The United States and Japan remain important patent origins, while the Republic of Korea has also developed a substantial patenting presence. Germany represents the strongest European origin among the countries listed in Table 2.

The concentration is not simply a consequence of population. The countries leading global patent activity also possess substantial manufacturing, technological, research and development or industrial capabilities. Patent activity therefore appears closely connected to the broader organization of national innovation systems.

5.3 Regional Concentration

The increasing importance of Asia is one of the most significant developments identified by the study.

Table 3. Selected Indicators of Asian Intellectual Property Concentration

Indicator	2014	2024
Asia's share of global patent applications	Approximately 60%	70.1%
Relative position of Asia	Major filing region	Dominant filing region
Principal patent-filing jurisdictions	China, Korea	Japan, China, Japan, Korea and India
Characteristic	Rapid expansion	Consolidated global leadership

Source: WIPO IP Facts and Figures 2025.

The increase from approximately 60% to 70.1% of global patent applications over a decade illustrates a substantial geographical shift. WIPO further reports that China, India, Japan and the Republic of Korea together accounted for 95.2% of Asia's patent applications in 2024.

This pattern has important implications for theories of global innovation. Earlier understandings of technological leadership frequently emphasized North America, Western Europe and Japan. Contemporary filing statistics demonstrate a more geographically diversified innovation system in which Asian economies play a central role.

5.4 Trademark Activity

Trademark activity provides a contrasting pattern.

Table 4. Selected Trademark Filing Indicators, 2023–2024

Indicator	2023	2024	Growth
Global trademark application class count	15,249,000	15,228,300	–0.1%
China-origin applications	—	Approximately 7.3 million classes	—
United States-origin applications	—	836,457 classes	—
Russian Federation-origin applications	—	559,436 classes	—
India-origin applications	—	532,900 classes	+7.4%
Brazil-origin applications	—	436,291 classes	+10.4%

Source: WIPO World Intellectual Property Indicators 2025.

The global trademark market was essentially stable in 2024. However, the aggregate figure conceals substantial differences among countries. China remained the largest origin, with approximately 7.3 million application classes. The United States remained

a major origin, while India experienced 7.4% growth and Brazil experienced 10.4% growth.

This evidence suggests that trademark activity may be particularly sensitive to the development of domestic markets and entrepreneurial ecosystems. Countries with rapidly expanding consumer sectors may generate substantial trademark activity even when their patenting systems are comparatively smaller.

5.5 Industrial Design Activity

Industrial-design activity increased by approximately 2.2% in 2024.

Table 5. Leading Origins of Industrial-Design Filings, 2024

Rank	Country	Design Applications/Design Count
1	China	906,849
2	Germany	70,212
3	United States	66,855
4	Italy	63,668
5	Republic of Korea	60,109

Source: WIPO World Intellectual Property Indicators 2025.

China's design activity is considerably larger than that of the other leading countries. The top five origins accounted for approximately 74.9% of global design activity in 2024.

The sectoral composition of design filings also provides useful insight. Furniture and household goods and textiles and accessories each represented approximately 16.7% of global design filing activity, while tools and machines represented 11.3%, ICT and audiovisual products 9.2%, and electricity and lighting 8.9%.

This distribution illustrates the connection between design protection and consumer-facing manufacturing sectors.

5.6 International Patent Activity

Domestic patenting is only one component of the global intellectual property system. International filings provide additional information concerning firms' internationalization strategies.

Table 6. Leading PCT Filing Origins, 2024–2025

Rank	Country	PCT Applications, 2025
1	China	73,718
2	United States	52,617
3	Japan	47,922
4	Republic of Korea	25,016

Rank	Country	PCT Applications, 2025
5	Germany	16,441
6	France	7,778
7	United Kingdom	5,809
8	Switzerland	5,012
9	Netherlands	4,239
10	Sweden	3,857

Source: WIPO IP Facts and Figures, 2026 update.

Worldwide PCT applications reached 275,900 in 2025, an increase of 0.7% over 2024. China remained the largest user of the system, followed by the United States and Japan. The top ten origins accounted for 87.9% of total PCT applications.

The PCT figures reinforce the conclusion that global intellectual property activity is concentrated among a relatively small number of technologically and economically significant jurisdictions.

5.7 Comparative Growth

Table 7. Comparative Interpretation of Major IP Categories

IP Category	2024 Activity	Global Annual Change	Principal Observation
Patents	3.725 million	+4.9%	Strong technological filing growth
Trademarks	15.228 million classes	-0.1%	Broad global stability
Industrial designs	1.559 million	+2.2%	Moderate expansion
Utility models	3.254 million	+4.0%	Strong growth concentrated largely in Asia

Source: WIPO IP Facts and Figures 2025.

The comparative evidence indicates that intellectual property should not be treated as a homogeneous phenomenon. Each right exhibits a distinct geographical and economic logic.

Patents are closely connected with technological innovation and research activity. Trademarks are closely connected with commercialization and market differentiation. Designs are associated with product appearance and consumer-oriented differentiation. Utility models, meanwhile, are particularly concentrated in jurisdictions where this form of protection is extensively used.

6. Discussion

The empirical findings support several important conclusions concerning the contemporary intellectual property landscape.

First, global IP activity continues to expand, although growth differs considerably across rights. Patent applications grew 4.9% in 2024, while design activity grew 2.2%. Trademark activity remained almost unchanged. This suggests that technological and product-development activity may currently be expanding at a faster pace than aggregate demand for additional trademark protection.

Second, global IP activity is highly geographically concentrated. Asia accounted for approximately 70.1% of global patent applications in 2024, representing a substantial increase from its approximately 60% share in 2014.

This transformation is theoretically significant because it demonstrates that global innovation systems are not static. The centre of gravity of technological activity has shifted substantially toward Asia. China is the most prominent example, but Japan, the Republic of Korea and India also contribute significantly to the region's intellectual property performance.

Third, filing volumes reflect broader structural differences among national economies. The leading patent origins tend to possess substantial industrial, technological or research capabilities. Their intellectual property activity is therefore embedded within broader innovation ecosystems rather than operating independently of them.

Fourth, the relationship between IP filing activity and innovation should be interpreted carefully. Patent quantity does not necessarily equal patent quality. A high filing volume may reflect genuine innovation, strategic patenting, institutional incentives, large research organizations or defensive patenting strategies. Similarly, a lower filing volume does not automatically indicate an absence of innovation. Firms may choose secrecy, open innovation or other commercialization approaches instead of patent protection.

The same qualification applies to trademarks. High trademark activity may reflect strong entrepreneurial activity, but it may also result from extensive product portfolios or administrative strategies. Therefore, IP statistics are best regarded as indicators of activity within innovation and commercial systems rather than comprehensive measures of innovation performance.

6.1 Intellectual Property and Institutional Capacity

The findings also emphasize the importance of institutional capacity. A functional IP system requires more than legislation. Effective patent, trademark and design protection depends on administrative capacity, examination quality, digital infrastructure, enforcement mechanisms, judicial expertise and awareness among businesses.

The increasing volume of global filings places additional pressure on intellectual property offices. A significant increase in applications can create examination backlogs unless institutional capacity expands correspondingly. Consequently, countries seeking to increase their innovation performance should consider investment not only in research and development but also in IP administration.

6.2 Intellectual Property and Global Competition

The concentration of international patent activity among a relatively small group of countries also has implications for global economic competition. The leading PCT users represent major centres of technological development and international business activity.

The increasing prominence of China in both domestic and international patenting illustrates the transformation of the global competitive landscape. China's position is particularly notable because it combines large-scale domestic patent activity with extensive international filing.

At the same time, the continued presence of the United States, Japan, Germany and the Republic of Korea among leading international filers indicates that established innovation economies remain highly competitive.

6.3 The Growing Importance of Asia

The rise of Asia deserves particular consideration. WIPO data show that the region's share of global patent applications increased from approximately 60% in 2014 to 70.1% in 2024.

This growth reflects several interconnected developments, including expansion of manufacturing capabilities, investment in research and development, growth of technology-intensive industries, increasing domestic markets and stronger institutional emphasis on intellectual property.

The implications extend beyond Asia. European and North American firms increasingly compete in markets where Asian firms are important technology developers and IP owners. Consequently, international IP strategy must account for a more multipolar innovation environment.

6.4 Patents, Trademarks and Designs as Complementary Assets

Another important finding is that intellectual property rights operate as complementary rather than isolated mechanisms.

A technology company may use patents to protect technical inventions, trademarks to protect its brand and industrial designs to protect product appearance. The combination of these rights can create a multilayered intellectual property portfolio.

For example, a consumer electronics company may patent a technological feature, register its brand name as a trademark and protect the appearance of a device through

design rights. From a strategic management perspective, therefore, IP portfolios should be considered holistically.

7. Policy Implications

The findings provide several implications for policymakers.

7.1 Strengthening Intellectual Property Administration

Governments should ensure that intellectual property offices have sufficient financial, technological and human resources to process increasing filing volumes. Digital filing systems, automated administrative processes and examiner training can improve efficiency.

7.2 Supporting Small and Medium-Sized Enterprises

Large corporations account for a substantial proportion of patent and international filing activity. Small and medium-sized enterprises may face greater difficulties in understanding IP procedures and financing international protection.

Governments and IP institutions should therefore provide accessible advisory services, awareness programmes and financial support mechanisms where appropriate.

7.3 Improving Commercialization Capacity

Patent filing alone does not guarantee economic value. Policymakers should therefore connect intellectual property policy with technology transfer, entrepreneurship, venture capital, research commercialization and industrial policy.

Universities in particular can benefit from stronger technology-transfer institutions that help transform research outputs into commercially viable products.

7.4 Developing International IP Strategies

The geographical concentration of PCT filings demonstrates the importance of international protection. Firms seeking global expansion should evaluate foreign markets at an early stage and develop IP strategies aligned with commercialization objectives.

7.5 Balancing Protection and Access

Strong intellectual property rights can support innovation, but policy should also consider the social costs of excessive protection. Effective systems must balance incentives for innovators with competition, knowledge diffusion, follow-on innovation and public access.

The appropriate balance may vary by sector. Pharmaceutical technologies, digital technologies, manufacturing, creative industries and consumer products may require different approaches.

8. Managerial Implications

The findings are also relevant to corporate managers.

First, firms should view IP as a strategic asset rather than merely a legal compliance requirement. Patent, trademark and design portfolios can support market positioning, licensing, investment negotiations and competitive differentiation.

Second, internationalization requires careful prioritization. Because international filing can be costly, firms should identify commercially important jurisdictions rather than automatically pursuing protection everywhere.

Third, companies should integrate IP management with research and development decisions. Early identification of patentable inventions can prevent loss of rights and improve strategic planning.

Fourth, firms should monitor competitors' intellectual property activity. Patent and trademark databases can provide information about technological directions, product strategies and market expansion.

Finally, businesses should recognize that intellectual property rights generate value only when connected with effective commercialization. An extensive portfolio that is never used, licensed or strategically deployed may generate substantial costs without equivalent economic benefits.

9. Limitations

Several limitations should be acknowledged.

First, the study relies exclusively on secondary data. Consequently, it cannot establish why individual firms or countries filed particular applications.

Second, filing counts do not measure the economic value or quality of intellectual property rights. A single highly valuable patent may have greater economic significance than hundreds of low-value patents.

Third, national differences in filing practices, legal systems and industrial structures can influence international comparisons.

Fourth, trademark statistics are measured primarily through application class counts, whereas patents and designs use different measurement approaches. Direct comparison of absolute volumes across IP categories should therefore be avoided.

Fifth, the study uses descriptive rather than causal analysis. It identifies associations and patterns but does not demonstrate that intellectual property protection directly causes economic growth or innovation.

Future studies could address these limitations through panel-data methods, firm-level analysis, patent-quality indicators, citation analysis, patent renewal information and economic-performance variables.

10. Directions for Future Research

Future research could extend the present study in several ways. First, researchers could construct longitudinal country-level datasets covering twenty or thirty years of IP activity. Such datasets could be used to examine whether changes in patenting precede changes in productivity, exports or high-technology manufacturing.

Second, patent-quality measures could be incorporated. Patent citations, family size, renewal duration and international filing breadth may provide more meaningful indicators of technological significance than raw application counts.

Third, research could examine the relationship between intellectual property and emerging technologies. WIPO data already demonstrate the growing importance of fields such as computer technology and digital communication. In 2023, computer technology accounted for approximately 13.2% of published patent applications worldwide, while electrical machinery, measurement and digital communication were also prominent technological fields.

Fourth, future research could examine how artificial intelligence changes patenting, trademark administration, copyright, design protection and IP enforcement.

Finally, comparative research could investigate whether developing countries can translate increased IP filing activity into measurable improvements in productivity, employment and economic diversification.

11. Conclusion

This study examined global intellectual property activity using secondary data from the World Intellectual Property Organization. The evidence demonstrates that the global intellectual property system continues to expand but that the trajectory differs across patents, trademarks and industrial designs.

Patent applications increased by 4.9% in 2024 to approximately 3.7 million applications, while industrial-design activity increased by 2.2%. Trademark application class counts remained essentially stable at approximately 15.2 million.

The geographical distribution of activity represents an even more significant finding. Asia accounted for approximately 70.1% of global patent applications in 2024, compared with approximately 60% in 2014. China, Japan, the Republic of Korea and India have become particularly important contributors to this transformation.

China's position is especially prominent. Its applicants filed approximately 1.8 million patent applications worldwide in 2024, while the country also represented the largest origin of PCT applications in 2025.

However, the study cautions against interpreting filing volumes as direct measures of innovation quality or economic performance. Intellectual property statistics reflect a combination of technological activity, market size, institutional incentives, business strategy and legal behavior. Accordingly, IP statistics should be integrated with broader indicators when evaluating national innovation systems.

The findings nevertheless demonstrate the value of intellectual property statistics as indicators of structural change. The global innovation landscape is becoming increasingly multipolar, with Asian economies playing a central role alongside established innovation centres in North America and Europe. This transformation has implications for governments, businesses, universities and international organizations.

For policymakers, the challenge is not simply to increase the number of intellectual property filings but to create institutional environments in which protected knowledge can be transformed into productive economic and social outcomes. For firms, intellectual property should be integrated into broader strategies concerning research, commercialization and international market expansion.

Ultimately, the effectiveness of an intellectual property system should be evaluated not merely by how many applications it receives but by how effectively it supports innovation, competition, investment, knowledge creation and sustainable economic development.

Declarations

Funding: This sample article was prepared for demonstration purposes. No external research funding was received.

Conflict of Interest: The authors declare that there is no conflict of interest associated with this manuscript.

References

- World Intellectual Property Organization. (2024). *World Intellectual Property Indicators 2024*. Geneva: WIPO.
- World Intellectual Property Organization. (2025). *World Intellectual Property Indicators 2025*. Geneva: WIPO.
- World Intellectual Property Organization. (2025). *World Intellectual Property Indicators: Global patent and design filings reach new records in 2024, trademarks flat*. Geneva: WIPO.
- World Intellectual Property Organization. (2025). *IP Facts and Figures 2025*. Geneva: WIPO.
- World Intellectual Property Organization. (2026). *Intellectual Property Statistics*. Geneva: WIPO.
- World Intellectual Property Organization. (2026). *IP Facts and Figures: Patents, trademarks and designs*. Geneva: WIPO.
- World Intellectual Property Organization. (2024). *World Intellectual Property Indicators 2024: Statistical tables*. Geneva: WIPO.