

INTELLECTUAL PROPERTY RIGHTS AND THEIR TREND ANALYSIS IN THE REPUBLIC OF MOLDOVA

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Abstract: Intellectual property is widely recognized as a driver of enterprise growth, promoting innovation and competitiveness. This paper analyzes the trends in intellectual property rights registrations and granted protections for Republic of Moldova residents over the past 10 years. Based on statistical data analysis of the World Intellectual Property Organization, the State Agency for Intellectual Property, and the Global Innovation Index Report, the study reveals a notable dominance of trademark applications, accounting for 84.9% of the total applications. Conversely, patent and utility model filings, on the other hand, experienced significant declines of 41.5% and 29.7%, respectively. This gap reflects an overwhelming trend towards brand protection and not technological development in Moldova. While industrial designs and trademarks reveal highest success rates for registration, the underutilization of such valuable innovation tools as patents and utility models indicates underlying structural challenges, i.e., low investment in research and development, insufficient incentives for innovation, and potential weaknesses in the commercialization of research outcomes. Furthermore, underrepresentation of geographical indications and traditional specialties indicates untapped potential for leveraging Moldova's unique heritage.

Keywords: intellectual property rights, Moldova, patents, trademarks, innovation, geographical indications

JEL Classification: O31, O34.

1. Introduction

The Republic of Moldova's intellectual property system is supported by a legal and institutional framework that provides a guarantee for the effective protection and promotion of intellectual property rights. The system allow natural and legal entities to identify, obtain, and protect intellectual creation-related rights through this very important sector at the foundation of innovation and economic development. The State Agency on Intellectual Property (AGEPI) is the primary institution that plays a central role in shaping national IP policies, aligning Moldova's regulatory framework with international standards, and providing services related to the protection and registration of intellectual property. Through coordinated planning, treaty implementation, and institutional cooperation, AGEPI is strengthening Moldova's position in global intellectual property systems and is helping integrate it into international innovation networks.

The significance of intellectual property was initially acknowledged at the international level through the establishment of determining agreements such as the Paris Convention (1883) and the Berne Convention (1886). Even today, intellectual property is a main factor in economic growth, competitiveness, and innovation. In this respect, industries with high intellectual property intensity in protection contribute to development with increased research, technology transfer, and foreign direct investment. A strong and transparent IPR regime is important to attract investment, ensure appropriate awards for creators and strengthen market positions of economic agents.

In Republic of Moldova, the development of the intellectual property system was closely associated with the transition of the country to the market-based system from the

planned economy during the 1990s. The framework for intellectual property protection is closely tied to the evolving ideas of private property and entrepreneurship. It's actually reflected into the country's Constitution, which clearly acknowledges both public and private ownership of material and intellectual assets, emphasizing the importance of their legal safeguarding. The Moldovan IP system consists of two major branches: industrial property (including patents, trademarks, industrial designs, geographical indications, plant variety, appellations of origin, traditional specialties guaranteed) and copyright and related rights. While these branches fall under the broad umbrella of intellectual property, each object maintains different characteristics in terms of scope, purpose, protection mechanisms and legal procedures. This difference continues to shape institutional, legislative and operational frameworks governing IP in Moldova.

The increasing ubiquity of IP in the economy, culture, science, and social life has driven heightened interest among applicants seeking robust legal protection of intellectual property rights (IPR). The protection of IPRs is of great importance in the commercial activities of agents on the market. IPRs protect the positions of creators and innovators, guaranteeing fair earnings from their work. Furthermore, IPRs facilitate the attraction of investments into research and innovation. Understanding the data of intellectual property is necessary to assess the performance and maturity of the national innovation system. These data provide an average insight into the levels of inventive activity, the engagement of individuals and firms in protecting their creations, and the sectors that have high innovation potential. They also show the effectiveness of institutional mechanisms and policies in encouraging the use of IP as a strategic tool. In addition, the trends in intellectual property filing - such as patents, trademarks, and industrial design – can serve as early indicators of economic dynamics, technological advancement, and the ability of the economy to use intangible assets to create and retain value.

This paper examines the evolution of industrial property over the past decade, with the objective of elucidating their developmental trajectory and their position within the Moldovan innovation ecosystem.

2. Data sources and methods

This study employs an integrated approach, combining qualitative and quantitative methods, to analyze the trends and dynamics of intellectual property objects (IPO) registration and protection in the Republic of Moldova over the past decade.

Statistical data analysis represents the central focus of the study, which examines several key indicators, including:

- The number of applications filed for patents, utility models, trademarks, industrial designs, and geographical indications, as well as the evolution of granted protection
- The success rate of IPOs, measured as the ratio of granted protections to filed applications.
- Growth indices (2023/2014), which highlight changes in IPO registration activity over a decade.

In order to contextualize Moldova's performance within an international framework, the study assesses its rankings and metrics in the Global Innovation Index (GII). The following GII indicators have been analyzed:

- Knowledge and technology outputs, with metrics such as patents by origin per billion PPP\$ GDP and utility models by origin per billion PPP\$ GDP.

- Creative outputs, featuring trademarks and industrial designs by origin per billion PPP\$ GDP.

The research is based on secondary data from the following sources: the State Agency on Intellectual Property for national statistics on geographical indications, appellation of origin, plant variety registrations and protections; the National Bureau of Statistics for supplementary economic indicators; the World Intellectual Property Organization (WIPO) for trademark, patent, utility model, patent data. The findings are presented in graphical and tabular formats to ensure clarity and accessibility of the information.

3. Results and discussion

Applications for IPO Registrations. The most important statistical indicators regarding the functioning of the national intellectual property system are closely related to economic, investment and innovation activities. These indicators reflect the maturity of the market economy, the competitive environment, and the interest of domestic and foreign producers in developing businesses in the Republic of Moldova. Table 1 presents a summary of the data regarding the applications for patenting/registration submitted in the last 10 years (2014-2023) by applicants residing in Moldova.

Table 1. Evolution of IPO applications by Moldovan applicants (2014-2023)

	2014	2019	2020	2022	2023	Total 2014- 2023	Index 2023/2014	Share, %
Total patent applications	79	109	104	54	47	846	59.5	1.7
Utility model - Total applications	158	138	152	104	111	1376	70.3	2.8
Total trademark applications (direct and via the Madrid system)	1904	1794	2188	1747	1827	18401	96.0	84.9
Total design applications (direct and via the Hague system)	102	102	86	69	44	818	43.1	3.8
Plant variety application	27	11	24	18	9	210		0.4
Appellations of origin applications	0	2		1		5		0.01
Geographical indications applications	0	3	1			7		0.01
Traditional specialties guaranteed applications		1		5		6		0.01
TOTAL						21669		100

Source: author's calculation based on WIPO and State Agency for Intellectual Property data

During the period between 2014 and 2023, a total of 21,669 applications for various IPO categories were submitted by Moldovan residents. The largest share was accounted for by trademarks (84.9%), followed by industrial designs (3.8%) and utility models (2.8%). Patents constituted a mere 1.7% of the total, reflecting a limited engagement with high-value innovations that require robust patent protection.

- Trademarks. There was a slight decrease of 4% in the number of trademark applications submitted in 2023 in comparison to those submitted in 2014. However, in the 2023 year, this category of intellectual property exhibited a modest increase in comparison to the previous year (2022). The prevalence of trademarks indicates that Moldovan businesses, particularly SMEs and individual entrepreneurs, prioritize brand protection.
- Industrial designs. The number of applications for industrial designs exhibited considerable fluctuation, with a 56.9% decline observed between 2014 and 2023. Such variability may be indicative of shifts in product development priorities or market demands.
- Utility models and patents. Both categories exhibited a noteworthy decline, with patent applications decreasing by 41.5% and utility models by 29.7%. This trend suggests the presence of barriers to innovation and a lack of investment in research and development (R&D).

It would appear that entrepreneurs in Moldova tend to undervalue innovation as a key factor for competitiveness. Furthermore, there seems to be limited awareness of the benefits that innovation can bring, as well as the potential for collaboration in innovation development. The data on innovation activity in enterprises published by the National Bureau of Statistics is illustrative of this situation. Of the enterprises included in the survey, only approximately 420 were engaged in innovation activities during the 2021-2022 period. This represents approximately 11.4% of the total number of enterprises included in the survey, indicating that innovation activity in enterprises is not particularly widespread. Furthermore, the statistical data indicate a notable decline in the number of innovative SMEs between the 2017-2018 and 2021-2022 periods, with a reduction of 30.6%.

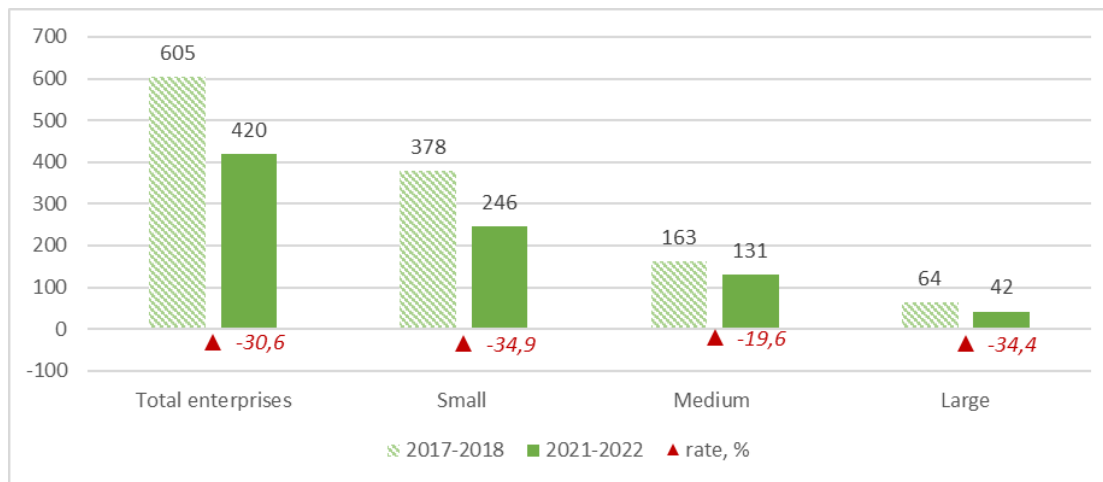


Fig. 1. Evolution of innovative enterprises by size class, 2021-2022 compared to 2017-2018

Source: author's calculation based on (National Bureau of Statistics, 2023)

Granted protections. From 2014 to 2023, a total of 16,631 industrial property objects originating from Moldovan applicants were granted protection. These include registrations and grants obtained both domestically and internationally, thereby emphasizing the activity

and innovation of Moldovan residents in various intellectual property categories. The distribution highlights a strong preference for trademarks, which accounted for 85.6% of the total number of protections. Utility models and industrial designs constituted 6.2% and 3.8%, respectively, while patents, despite their significance for high-value innovation, represented only 2.8%. Table 2 provides detailed insights into these dynamics.

Table 2. The evolution of granted protection for applicants residing in Moldova (2014-2023)

	2014	2019	2020	2022	2023	Total 2014- 2023	Index 2023/2014	Share, %
Total patent granted	63	35	44	38	41	469	65.1	2.8
<i>Resident</i>	49	29	33	32	36	379	73.5	2.3
<i>Abroad</i>	14	6	11	6	5	95	35.7	0.6
Total trademark registrations (direct and via the Madrid system)	1359	1534	1546	1815	1382	14238	101.7	85.6
<i>Resident</i>	901	852	947	1135	969	9174	107.5	55.2
<i>Abroad</i>	458	682	599	680	413	5064	90.2	30.4
Total utility model grants (direct and PCT national phase entries)	132	82	89	88	62	1031	47.0	6.2
<i>Resident</i>	130	78	88	86	62	1008	47.7	6.1
<i>Abroad</i>	2	4	1	2		23	0.0	0.1
Total design registrations (direct and via the Hague system)	105	48	83	62	32	637	30.5	3.8
<i>Resident</i>	80	34	60	41	30	483	37.5	2.9
<i>Abroad</i>	25	14	23	21	2	154	8.0	0.9
Plant variety	26	23	37	7	21	238	80.8	1.4
Appellations of origin		1	1	1	1	5		0.03
Geographical indications		2	1		1	7		0.04
Traditional specialties guaranteed		1			5	6		0.04
TOTAL						16631		100

Source: author's calculation based on WIPO and State Agency for Intellectual Property data

The number of registered trademarks exhibited a modest increase of 1.7% in 2023 when compared to the figures recorded in 2014. Of these, 64.4% were granted within Moldova, while the remaining 35.6% were obtained abroad, reflecting the strategic focus of Moldovan applicants on both domestic and global brand protection.

There was a notable decline in the number of patents granted during the period under review, with a reduction of 35% observed. The proportion of domestic patent grants was higher than those from abroad (80.8% vs. 19.2%). This decline indicates a deficiency in high-value innovation and an absence of adequate incentives for patentable inventions.

The number of registrations for industrial designs exhibited considerable volatility, with a pronounced decline of -69.5% between 2014 and 2023. The limited growth indicates a necessity for more robust support for design-driven innovation and product diversification.

Moldova has made some progress in leveraging its agricultural and geographical resources for intellectual property protection, but challenges still remain. While there was an initial modest but steady evolution in plant variety protection, there was a 19% decline between 2014 and 2023. Conversely, applications for appellations of origin and geographical indications have remained minimal, indicating a significant untapped potential for the promotion of Moldova's distinctive agricultural and regional products. This indicates the necessity for a more concentrated effort and investment in the protection and marketing of these valuable resources.

The data demonstrate a structural imbalance in Moldova's IP landscape, with a pronounced emphasis on trademarks but minimal engagement in patents, utility models, and designs. This pattern underscores the existence of significant challenges, including a dearth of R&D investment, an absence of adequate innovation incentives, and a deficiency in strategic support for industrial and design innovations.

IPOs that have obtained protection in the total number of applications submitted. Of the total 21669 applications submitted, 16,631 received granted protection (76,8%), with varying success rates across intellectual property categories (Table 3).

- *Patents:* Of the 846 applications, only 469 (55.4%) were granted protection. This relatively modest success rate may be attributed to either the application of rigorous examination standards or the submission of applications that fail to meet the exacting patentability requirements.
- *Utility models:* A higher success rate was observed for utility models, with 1,031 grants from 1,376 applications, representing a success rate of 74.9%. This can be attributed to their suitability for incremental innovations and the less stringent innovation and novelty requirements compared to patents.
- *Trademarks:* A total of 14,238 protections were granted out of 18,401 applications, resulting in a robust success rate of 77.4%. This high rate serves to illustrate the considerable emphasis placed by applicants from Moldova on the securing of brand protection. In comparison to other categories, trademarks not only demonstrate the highest volume of applications but also exhibit a competitive success rate, reflecting the relative clarity of the distinctiveness and originality criteria within this category. This performance shows the important role of trademarks as a foundation of intellectual property activity in Moldova.
- *Industrial designs:* With 637 protections out of 818 applications, industrial designs achieved a high success rate of 77.9%, indicating a strong alignment with aesthetic and functional design criteria.
- *Plant varieties, geographical indications, and traditional specialties:* These categories demonstrated remarkable success rates, with geographical indications and traditional specialties exhibiting 100% success, and plant varieties achieving 113.3%. This indicates that in specific years, grants may exceed applications due to backlogs or carryovers from previous years, where pending applications from earlier periods are evaluated and granted protection in later reporting years. This highlights the strategic significance of these categories in safeguarding and advancing Moldova's agricultural and cultural heritage.

The overall success rate of 76.8% across all categories demonstrates a high degree of alignment between the submitted applications and the established criteria for protection. While trademarks and industrial designs exhibit solid performance, the relatively lower success rates for patents suggest room for improvement in fostering high-quality patent submissions and innovative activities.

Table 3. Share of IPOs that have obtained protection in the total number of applications submitted, 2014-2023, %

	Applications	Granted	Granted (rate of success), %
Patent	846	469	55.4
Utility model	1376	1031	74.9
Trademark	18401	14238	77.4
Industrial design	818	637	77.9
Plant variety application	210	238	113.3
Appellations of origin applications	5	5	100.0
Geographical indications applications	7	7	100.0
Traditional specialties guaranteed applications	6	6	100.0
Total	21669	16631	76.8

Source: author's calculation based on WIPO and State Agency for Intellectual Property data

Table 4 offers insight into Moldova's performance in the Global Innovation Index (GII) between 2016 and 2024, with a particular focus on knowledge and technology outputs, creative outputs, and specific intellectual property indicators.

Between 2016 and 2024, Moldova's performance in the Global Innovation Index (GII) indicates a notable decline in several key areas. The overall score for knowledge and technology outputs decreased from 34.9 to 23.4, resulting in Moldova's rank declining from 31st to 44th. This decline reflects the presence of significant challenges in sustaining knowledge production and technology dissemination. Similarly, there was a notable decline in patenting activity, with patents per billion PPP\$ GDP declining from a value of 3.8 to 1.2. This was accompanied by a reduction in the country's rank, from 31st to 47th (a decline of 16 positions).

A similar downward trajectory was observed in the case of creative outputs, with the score decreasing gradually from 39.6 to 31.5 and the rank declining from 34th to 51st (a reduction of 17 positions). The value of trademarks by origin/bn PPP\$ GDP, which had previously been a significant asset, saw a notable decline, from 179.2 to 80.8. This shift resulted in Moldova's ranking moving from the first position to the twelfth. Furthermore, there was a decline in the number of industrial designs, which resulted in a drop in the rank from 6th to 11th. This suggests that Moldova's innovation ecosystem, which has traditionally been regarded as a strength, is experiencing a weakening.

Notwithstanding these challenges, Moldova retains the opportunity to capitalize on its comparative advantages. The country's strong rankings in utility models and trademarks indicate potential for growth in these areas, particularly if supported by policies that enhance the creation and commercialization of intellectual property. Addressing these downward

trends will require targeted efforts, such as boosting R&D investments, fostering creative industries, and simplifying IP filing processes to encourage broader participation.

Table 4. Moldova's Performance in the Global Innovation Index (GII), 2016–2024

Indicators	2016		2024		2016/2024	
	Value/Score	rank (out of 128 economies)	Value	rank (out of 133 economies)	Rank evolution	Value/Score
Knowledge & technology outputs	34.9	31	23.4	44	-13	-11.5
Patents by origin/bn PPP\$ GDP	3.8	31	1.2	47	-16	-2.6
Utility models by origin/bn PPP\$ GDP	8.8	1	2.5	4	-3	-6.3
Creative outputs	39.6	34	31.5	51	-17	-8.1
Trademarks by origin/bn PPP\$ GDP	179.2	1	80.8	12	-11	-98.4
Industrial designs by origin/bn PPP\$ GDP	17.4	6	7	11	-5	-10.4

Source: Global Innovation Index Reports (Cornell University, INSEAD and WIPO, 2016; World Intellectual Property Organization, 2024b)

4. Conclusion

The analysis of IPR trends in Republic of Moldova over the last decade offers a comprehensive overview of the country's intellectual property landscape and its role within the innovation ecosystem. The majority of applications are for trademarks, which reflects a focus on brand protection rather than technological innovation. However, the significant decline in patent and utility model registrations highlights a number of structural challenges, including limited investment in research and development, inadequate incentives for innovation, and potential deficiencies in the commercialization of research outputs. These trends indicate that Moldova's innovation ecosystem is underutilized, particularly in domains that require high-value intellectual property, such as patents and utility models.

The consistently high success rates for industrial designs and trademarks indicate the efficacy of the IP registration system in these categories. Nevertheless, the underrepresentation of geographical indications and traditional specialties suggests that there are untapped opportunities for leveraging Moldova's distinctive cultural and agricultural heritage. The implementation of targeted initiatives to promote these areas has the potential to enhance the economic and cultural value derived from intellectual property.

To address the structural imbalances identified, policymakers in the Republic of Moldova should put more emphasis on the following areas:

- To strengthen R&D investment and innovation support systems including funding mechanisms for research institutes and businesses.

- To increase commercialization framework for patent and utility models, facilitating translation of scientific research in profitable products.
- To increase awareness and provide encouragement for geographical indications and traditional specialties, promoting a more diverse and inclusive IP ecosystem.
- To implement targeted policy reforms, aimed at reducing obstacles to patent and encourage widespread participation in IP-related activities.

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