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Bridging law, Business and Technology: The role of Industrial Property in University Curricula in Albania

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Abstract

Industrial Property plays a pivotal role in fostering innovation and entrepreneurship, functioning both as a legal safeguard and an economic driver. This study examines the current integration of Industrial Property (IP) education within Albanian higher education, with the aim of identifying the extent to which university curricula respond to the needs of a knowledge-based economy. Methodologically, the research combines theoretical analysis with empirical data, drawing on interviews with academic staff and survey responses from students in Law, Economics and Engineering faculties across selected universities. The curricula are evaluated through a qualitative content analyss framework based on interdisciplinarity, theoretical-practical balance and professional skill development. Findings indicate strong consensus among professors and students regarding the relevance of IP for employability, creativity and innovation capacity. However, significant gaps emerge in curricular integration, institutional support and faculty specialization, resulting in limited preparedness for professional IP related contexts. The study argues that embedding IP into higher education should not be treated as a minor curricular addition but as a strategic investment in academic quality, innovation culture and national competitiveness. The proposed recommendations contribute to ongoing discussion on curriculum reform in emerging economies.

Keywords: industrial property, innovation, curricula, higher education, Albania

1. Introduction

Industrial property represents one of the fundamental pillars of intellectual property and is a crucial element in building a knowledge-based economy. In today's global environment, where innovation and entrepreneurship are the primary drivers of

competitiveness, the legal protection of inventions, trademarks, and industrial designs is essential to ensure sustainable growth and effective integration into international markets (WIPO, 2022).

At the international level, organizations such as WIPO, EPO (European Patent Office, one of the main institutions in Europe that deals with examination and granting of patents), and OECD emphasize that a consolidated system of industrial property rights stimulates investments in scientific research, accelerates technology transfer, and creates favorable conditions for the development of start-ups and SMEs[1] (OECD, 2021) (Commission, 2020)). In this sense, industrial property is not merely a legal tool but also a national strategy for innovation.

In Albania and the Western Balkans, awareness of industrial property has increased in recent years, particularly due to the process of European integration. However, challenges remain evident: lack of tradition in protecting inventions, low levels of registered patents and trademarks, and the limited inclusion of industrial property in university curricula. Unless treated as a public policy priority, the region risks falling behind in global competitiveness.

1.1 Literature Review

Academic Books, journal articles and reports from international organizations such as WIPO, OECD (Organization for Economic Cooperation and Development is an international organization that promotes policies that improve economics and social well being around the world) and EU, were examined to establish the theoretical and policy background.

Scholars such as Maskus (Keith, 2012) and OECD emphasize that the system of industrial property is a key mechanism for fostering innovation. Legal protection of inventions and trademarks encourages companies to invest more in research and development, since the economic benefits.

According to OECD, patent-intensive industries make a high value employment opportunities. They demonstrate that start-ups with registered patents are more likely to secure funding and expand into new markets, confirming the strong relationship between patent systems and entrepreneurial success.

Recent research from Scopus and WoS emphasizes that the integration of intellectual property education into higher education systems is a direct contributer to innovation capacity, graduate employability and academic-industry knowledge transfer. Aver, Fosner and Alfirevic (Aver Bostjan, 2021) demonstrate that universities which embed innovation focused competencies into curricula experience higher student participation in entrepreneurial projects and technology transfer initiatives. Similarly, Perkmann et al. (Perkmann M, 2019) argue that IP training must

[1] Small and Medium Sized Enterprises are businesses that are smaller than large corporation that often rely on industrial property rights to protect their ideas ad compete in the market.

evolve toward interdisciplinary models that combine legal, economic and technical literacy to respond to contemporary market demands.

Within the European Union, literature indicates that integrating industrial property into higher education is a widespread practice. Such integration has proven effective in increasing student awareness, improving innovation skills and supporting entrepreneurial initiatives. In the Western Balkans, however, academic research on this topic remains limited, though studies show that the inclusion of industrial property in university programs is gradually increasing.

1.2 Methodology

This study applies a qualitative research design supported by elements of mixed-method evidence. The empirical component consists on semi structured interviews with professors of law, economics and engineering and survey responses from 30 students across the same faculties. Curriculum documents and course structures were reviewed to assess how IP is currently positioned in university programs. Data were analyzed through thematic content analysis using three evaluation criteria: i) interdisciplinary between law, business and technology; ii) balance between theoretical and practical training and iii) alignment with labor-market innovation needs. This approach enables the identification of both structural limitations and potential pathways for curricular reform.

In addition to the qualitative design described above, the research process followed three analytic stages. First, curriculum documents, course syllabus and program learning outcomes were examined to identify the presence and positioning enabled the classification of modules according to their disciplinary focus and their functional purpose. Second, semi structured interviews were thematically coded to identify patterns related to institutional readiness, faculty expertise and pedagogical challenges. Third, student survey responses were aggregated and compared across faculties in order to detect perception gaps in awareness, perceived importance and demand for curricular reform.

2. The Role of Industrial Property in Innovation and Entrepreneurship

Industrial Property is not only a legal tool for protecting inventions, designs and trademarks but also a strategic driver of innovation and knowledge creation. Its role in stimulating technological development and entrepreneurship has been widely recognized in both academic and policy literature. (OECD, 2021)

2.1 Definition of Industrial Property

Industrial property is a sub-system of intellectual property, covering technical inventions (patents), distinctive signs (trademarks), industrial designs, and trade names. According to WIPO (WIPO, 2022), its purpose is to create a balance between private and public interest: the inventor enjoys exclusive rights and economic benefit, while society benefits from the diffusion of knowledge.

Thus, industrial property serves as both a legal and economic mechanism, strengthening competitiveness, encouraging investments in research, and fostering technology transfer. A strong system of protection is increasingly considered an indicator of economic development (Keith, 2012). Beyond the economic aspects, industrial property contributes to shaping a culture of creativity and innovation. When students, researchers and entrepreneurs know that their intellectual contributions will be recognized and protected, they are more motivated to engage in innovative activities. This cultural dimension is particularly important for developing and transition economies such as Albania, where cultivating innovative mindsets is a prerequisite for long-term competitiveness.

2.1.1 the Impact of Patents on Innovation and Economic Growth

Patents protect technical inventions for 20 years, granting inventors or institutions exclusive rights to exploit them. Their contribution is twofold:

Encouragement of scientific research and technological development – inventors are assured of economic benefits from their work.

Creation of competitive and open markets – companies compete based on innovation, raising quality standards.

OECD (OECD, 2021) emphasizes that patent-intensive industries contribute significantly to GDP and to creating high-value jobs. In Albania and the region, the number of patents remains low, reflecting the lack of a consolidated research tradition and the need for stronger support for research institutions and technology start-ups.

2.2 Entrepreneurship and the Role of Trademarks

Trademarks play a critical role in building a company's market identity and consumer trust. While patents are often linked to technological innovation, trademarks play a central role in supporting entrepreneurship by building brand identity and consumer trust. A trademark functions as a distinctive sign that allows companies to differentiate their products and services in competitive markes, thereby serving both as a legal safeguard and a marketing tool. (WIPO, 2022)

For small enterprises and start-ups, registering trademarks is a strategy for survival and growth. Studies show that companies owning trademarks are more likely to attract investment and achieve long-term stability (Grimaldi, 2020). Scholars such as Keller (K.L, 2013) and Barney (J.B, 1991) argue that intangible assets like trademarks can provide a sustained competitive advantage, helping young firms to secure their place in the market. In Albania and the region, awareness remains low, though recent years have shown growth in registrations.

Empirical research has shown that trademarks often act as proxies for market-oriented innovation. Trademarks are extensively used by SMEs as innovation indicators and tools to signal credibility. (Medonca S, 2004). Others have found that

firms registering trademarks are more likely to launch new products and expand into new markets. In this sense, trademarks are not merely protective instruments but strategic drivers of growth that enable entrepreneurs to attract investors, secure partnerships and compete internationally. (V., 2009)

Industrial property is the foundation of sustainable innovation and entrepreneurship. Patents protect inventions and encourage research, while trademarks ensure brand identity and market differentiation. The region lags behind EU averages, requiring stronger policy and educational measures.

3. Challenges and Benefits of Integrating Industrial Property into Curricula

The integration of IP into higher education curricula faces several obstacles, particularly in developing and transition economies such as Albania and the Western Balkans. The conversation about innovation often focuses on laboratories, start-ups and investors-yet one of the most powerful catalysts of innovation sits quietly in the classroom. When universities teach students how ideas can be protected, valued and transform into products, they nurture the next generation of innovators. However, embedding IP education into curricula is far from simple. It involves overcoming institutional inertia, recource limitations and cultural perceptions of creativity and ownership

3.1. Key Challenges

Lack of specialized expertise in faculties of law, economics, and engineering.

Many universities have limited staff with specialized knowledge in IP law and innovation management.

Professors often cover the topic only superficially within broader courses such as commercial law or business administration.

Scarcity of literature in Albanian, limiting accessibility.

There is a noticeable lack of textbooks, case studies and teaching material in albanian language. This makes it difficult for students to develop a nuanced understanding of patents, trademarks and industrial designs, despite the fact that nowadays they can clearly understand English.

Fragmented integration, often offered as an elective or under commercial law.

In many cases, IP is offered as an elective or small module within another course, rather than as a core, compulsory subject (In Faculty of Law, there is a module in Intellectual property, addressing more copyrights than industrial property. In Engeneering and Economic Faculty, industrial property is rarely addressed, only mentioned when talking about patent on an open lecture.) This reduces its perceived importance among students.

Weak connection to practice, with limited opportunities for students to experience real registration processes.

Cooperation between universities ad national industrial property offices remains limited. As a result, students often lack exposure to real world processes such as filling a patent or registering a trademark.

Limited awareness among students.

Interviews below revealed that many students are only vaguely familiar with industrial property. Several reported having heard about patents or trademarks in theory, but not understanding their practical significance.

3.2 Benefits

Despite these challenges, integrating IP into university curricula offers numerous long-term benefits.

Raises legal and economic awareness among students.

By learning about IP, students gain essential knowledge that increseas their capacity to protect and commerscialize their innovations. When curricula integrate IP, universities are more likely to collaborate with businesses and innovation hubs, supporting knowledge transfer and technology commercialization.

Encourages entrepreneurship and start-up creation.

Exposure to IP rights encourages students to engage in start-up creation and innovation-driven business ideas, providing them with tools to secure their competitive advantage.

Increases employability of graduates in innovation-oriented labor markets.

Graduates with IP knowledge are better prepared for jobs in law, business and technology sectors, where IP management is becoming increasingly important.

Supports EU integration through curriculum alignment.

For Albania and Western Balkans, curricular integration of IP aligns with EU best practices and strengthens the region's capacity to meet accession criteria related to innovation and competitiveness.

3.3 International Examples

To conterxtualize the Albanian experience, it is useful to ecamine how leading universities across Europe and beyond have embedded industrial property education into their academic programs. These international examples demonstrate a variety of models- from interdisciplinary integration to specializes IP centers- that could serve as references for University of Tirana and other regional institutions

Germany: Technical University of Munich integrates IP education within its engineering and innovation management programs. The "patent and licensing

management" module is mandatory for engineering master's students. (Munich) The collaboration with German Patent and Trademark Office, provides students with real patent databases for training.

United Kingdom: University of Cambridge incorporates intellectual property education across multiple faculties through its Technology Enterprise Program and Judge Business School. Law students analyze case law in IP litigation clinics while engineering and science students receive training in patent strategy and licensing as part of research commercialization courses. (Enterprises, 2023)

United States: Massachusetts Institute of Technology represents the global benchmark for integrating industrial property with entrepreneurship. Through the MIT Technology Licensing Office students learn how to protect and commercialize inventions. (Technology, 2023)

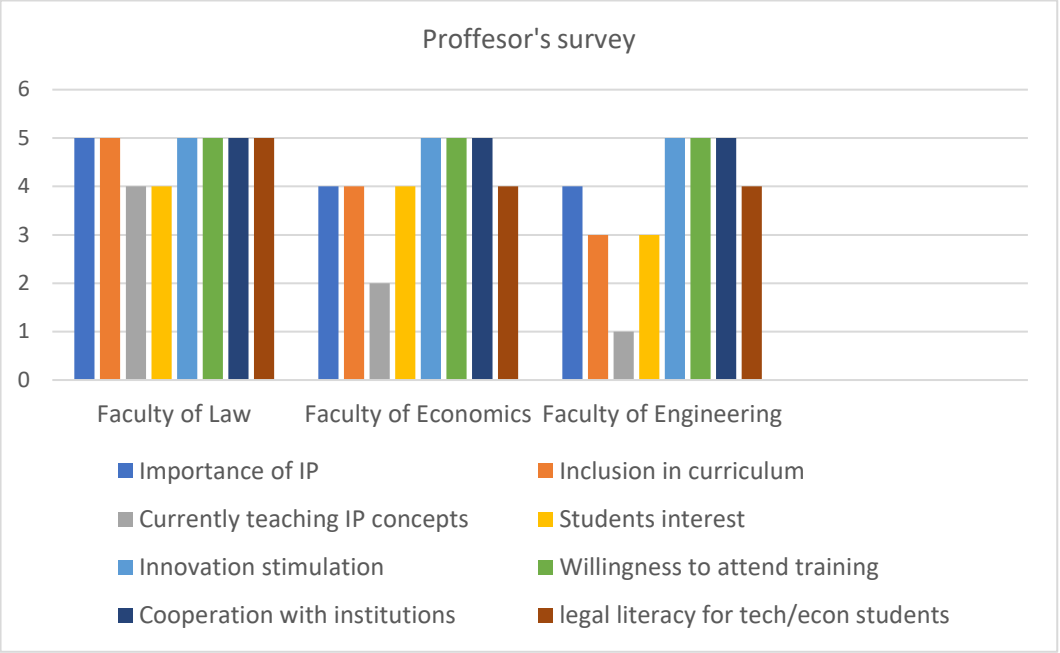
In Albania, General Directorate of Industrial Property has held meeting with students in Universities. Their annual reports mentions 7 Cooperation Agreement with several Universities in Albania (DPPI, 2024) aimed at promoting industrial property among students, academic staff, inventors and professionals, organising joint lectures, seminars, workshops and internships for students.

4. Academic Perceptions on Industrial Property Education in Albania

Understanding how IP is perceived by both educators and students is crucial to evaluating its potential integration into higher education. While policy frameworks and institutional strategies often emphasize innovation and entrepreneurship, the real impact depends on how these concepts are experiences and internationalizes at the classroom level. (Leydesdorff, 2000). Industrial property education remains a relatively new academic domain in Albania and its effectiveness depends heavily on awareness, institutional support and pedagogical engagement.

This chapter seeks to provide a grounded understanding of the current perceptions, challenges and opportunities related to IP. The interviews serve as a bridge between theoretical perspectives and real-world educational practices. Professor's reflections highlight institutional constraints, curriculum gaps and professional training needs while student's voices reveal levels of awareness, motivation and curiosity.

4.1 Professor's Survey



The survey collected responses from three professors-one each from Faculty of Law, Faculty of Economics and the Faculty of Engineering, to evaluate their perceptions regarding the importance and integration of industrial property education in university curricula.(Survey Annex 1). The results show strong overall agreement on the relevance of IP education across all faculties, with average rating between 4.2 and 4.8 for question 1,2,5 (importance of IP and innovation potential). However, variability was noted in responses related to current teaching practice and institutional readiness (question 3 and 6), indicating uneven implementation across disciplines.

The Law Faculty professor rated IP education as highly relevant but emphasized the need for practical case studies and student engagement. The Economics professor gave consistently high ratings, reflecting a strong interest in connecting IP education to entrepreneurship and business innovation. Meanwhile, the Engineering one agreed on the importance of IP but not limited curricular integration and a need for technical training on patenting processes.

Overall, the average rating across all faculties was 4.5, suggesting a broad consensus that industrial property should play a more central role in higher education. However, the data also reveal disciplinary differences:

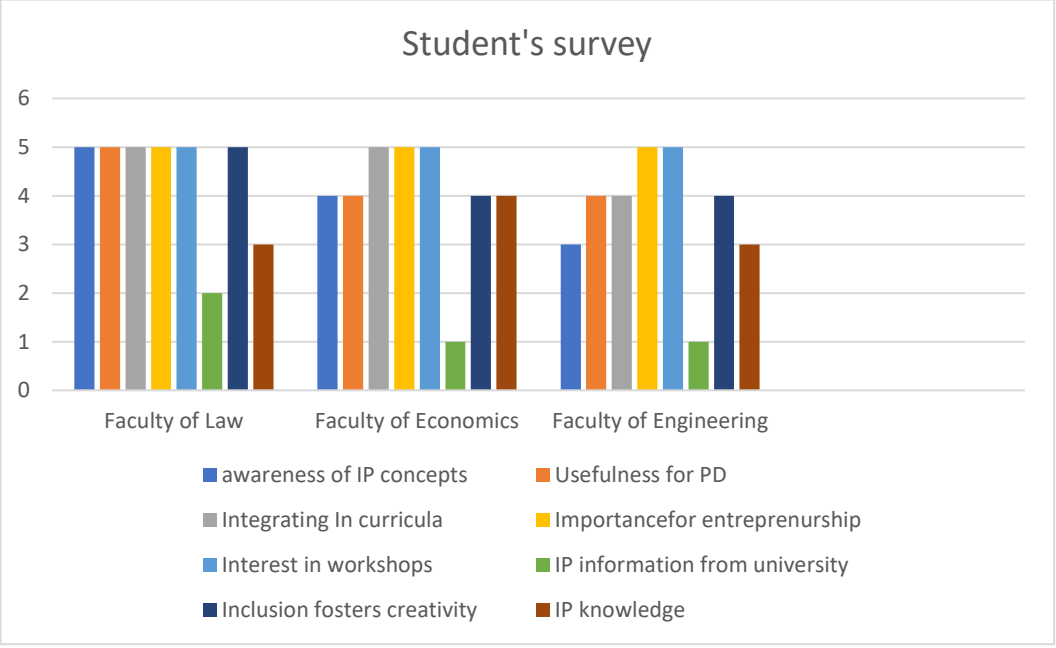
- *Law* focuses on the legal protection and policy aspects of IP;
- *Economics* highlights its value for competitiveness and innovation;
- *Engineering* emphasizes practical application and technology transfer.

The findings confirms that Albanian universities show growing awareness of the strategic importance of IP education, consistent with WIPO recommendations. The variation in responses reveals a fragmented approach to implementation, where some faculties integrate IP topics informally rather than through dedicated courses. This aligns with OECD (OECD, 2021) findings on the challenges of embedding IP in multidisciplinary curricula, particularly when faculty training and institutional collaboration are limited. Cross faculty collaboration-especially with the General Directorate of Industrial Property, appears as a recurring solution, as all participants rated cooperation with external institutions very highly (question 7). This demonstrates readiness for interdisciplinary teaching models and joint activities, which could strengthen innovation ecosystems at the national level. (Leydesdorff, 2000).

In summary, the survey results show that:

- Professors across faculties value IP education as a key driver of innovation and professional competence;
- Implementation remains uneven due to structural and curricular constraints;
- There is strong support for collaboration between universities, industry and government agencies to strengthen IP knowledge.

4.2 Student's Survey



A total of 30 showed their interest on completing this survey (Survey Annex 2). The purpose of this section is to explore their perceptions on IP education, awareness levels and the perceived importance of integrating IP into university curricula. The

results show that students across all faculties have a positive perception of the value of industrial property education. The highest levels of agreement appear for statements concerning the usefulness of IP for professional development and its importance for entrepreneurship.

This suggests that students recognize IP not as a theoretical subject, but as a practical skill set relevant to their future careers. However, awareness level remain moderate, particularly among engineering students, indicating that many are only vaguely familiar with patents of trademarks. This aligns with findings from WIPO (WIPO, 2022), which reports limited IP literacy among university students in emerging innovation systems. The lowest average score, was recorded for question 6, showing that students perceive a lack of institutional information or guidance about IP at universities. This perception supports the results obtained from professors, who similarly noted insufficient structural support and expertise for teaching IP related content.

The alignment between student and faculty responses demonstrates a shared recognition of need: both groups agree that industrial property deserves greater attention within academic programs. The students results, however add a nuanced layer- they reveal strong intrinsic motivation to learn about IP, attend workshops and engage in innovation-related activities. In particular, student from Economics gave the highest scores overall, emphasizing IP's connection to business and entrepreneurship, while those from engineering focused more on its technological application,

These results also suggest that universities have a timely opportunity to capitalize on student enthuaiasm by offering practical modules, collaboration with the General Directorate of Industrial Property and participation in innovation fairs or patent competitions. Fostering early exposure to IP concepts helps bridge the gap between academic knowledge and real world innovation ecosystems.

5. Recommendations

Based on the findings, the paper proposes a phased reform strategy. Phase one should prioritize curriculum, restructuring through mandatory introductory IP modules in Law and Economics, followed by discipline-specific technical modules in Engineering. Phase two requires capacity building for faculty members through professional certification programs in cooperation with the General Directorate of Industrial Property. Phase three should institutionalize university-industry partnerships, enabling students to participate in real pateting process, trademark applications, incubators and innovation labs.

Integrate Industrial property into core curricula- Universities should introduce IP concepts into mandatory courses across law, and at least modules on economic and engineering faculties. A phased approach with pilot programs can help ensure gradual and effective integration

Strengthen cooperation with national offices- Formalize partnerships between universities and national bodies for guest lectures, workshops and student internships focused on patent and trademark procedures. The cooperation should include guest lectures, workshops, interships and access to patent and trademarks databases, providing students with practical experience

Provide incentives for start-ups and universities registering patents and trademarks- Offering institutional and financial incentives for students and staff.

Raise public awareness through campaigns for young entrepreneurs- Develop awareness campaigns and workshops that make IP knowledge accessible to a wider audience, including start up founders, young investors and researchers.

6. Conclusions

Strategic focus should be placed on sectors with comparative advantages: IT, innovative agribusiness, and creative tourism. While challenges are significant, long-term vision and cooperation between universities, institutions, and the private sector can build a resilient ecosystem of innovation.

The integration of industrial property education across these faculties would mark a critical step toward aligning Albanian higher education with European Innovation policy. By building IP awareness among law, economics and engineering students, universities would not only prepare professionals capable of navigating global markets but also foster a culture of creativity that is both protected and profitable. This diversity of perspectives illustrates the need for interdisciplinary collaboration in teaching IP. The effective integration of IP education requires nor only curricular reform but also institutional partnerships, particularly with the government agencies and other innovation-oriented bodies.

This study confirms that the current approach to IP education in Albanian higher education, remains fragmented, predominantly theoretical and insufficiently aligned with innovation-driven labor market needs. Practically, the findings suggest that universities should adopt applied and interdisciplinary IP modules, establish collaboration with the General Directorate of Industrial Property and industry partners and introduce experiential learning formats such as patent clinics and licensing laboratories.

Industrial property education in Albania should no longer be seen as a luxury or optional subject, but as an urgent strategic priority. By embedding IP training across disciplines, universities will not only empower their students but also strengthen Albania’s capacity to compete in the global knowledge economy.

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