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Bridging the Gap in University–Industry Collaboration in Algeria: Toward a Framework for Managing Intellectual Property and Partner Responsibilities

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Abstract:

This study examines university–industry collaboration in Algeria from a legal and economic perspective, focusing on intellectual property and partner responsibilities. Findings show that unclear rights, obligations, and enforcement mechanisms weaken collaboration and limit the effectiveness of intermediaries such as incubators and liaison units. Strengthening collaboration requires coherent alignment between legal frameworks, institutional governance, and economic incentives, informed by international best practices.

Key Words

University–Industry Collaboration; Law and Economics; Innovation Governance; Intellectual Property Rights; Technology Transfer; Algeria

JEL :O32 ;K23 ;L24 ;I23

Introduction

In recent years, Algeria has increasingly positioned universities as central actors in national economic transformation and the transition toward a knowledge-based economy. This orientation has been translated into a series of public policies, strategic reforms, and legislative initiatives aimed at promoting scientific research, innovation, entrepreneurship, and the valorization of academic knowledge. Universities are no longer perceived solely as institutions for education and basic research, but as key contributors to technological development, industrial competitiveness, and socioeconomic growth.

In this context, Algerian public authorities have adopted multiple legal and policy instruments encouraging collaboration between universities and economic actors, including industrial firms, start-ups, and investment structures. These initiatives emphasize research commercialization, student entrepreneurship,

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innovation incubation, and stronger links between academic research and productive sectors. However, despite this strong political and strategic discourse, the effective integration of universities into the economic fabric remains limited in practice.

A critical examination of university–industry relations in Algeria reveals a structural ambiguity in the legal and institutional foundations governing such collaborations. While cooperation is encouraged, there is no comprehensive and coherent legal framework that explicitly defines the nature of the relationship between universities and economic partners, nor clearly specifies the rights, obligations, and incentives of each party. Questions related to intellectual property ownership, benefit-sharing mechanisms, risk allocation, confidentiality, and long-term partnership commitments remain insufficiently regulated or inconsistently addressed across institutions and projects.

As a result, economic actors often lack clear incentives to engage with universities, and when partnerships do occur, they tend to be ad hoc, short-term, and weakly institutionalized. This legal and regulatory uncertainty contributes to low trust, limited private sector engagement, and underutilization of academic research outputs, thereby undermining the broader objective of building an innovation-driven economy.

Against this background, the present study seeks to critically analyze the Algerian legal and institutional environment governing university–industry collaboration, with a particular focus on how partner rights and responsibilities are defined—or left undefined—within existing laws, regulations, and institutional practices.

Problem Statement

To what extent does the current Algerian legal and institutional framework clearly regulate the relationship between universities and economic partners in terms of rights, responsibilities, and benefit-sharing, and how does the absence or fragmentation of such regulation contribute to the persistent gap between academic institutions and the productive sector?

Research Questions

To address this central problem, the study seeks to answer the following research questions:

-What legal and regulatory instruments currently govern university–industry collaboration, intellectual property, and research commercialization in Algeria?

-How are the rights and obligations of universities, researchers, and economic partners defined within these instruments?

-What incentives or disincentives do existing laws and institutional arrangements create for economic actors to collaborate with universities?

-How do institutional bodies within universities (such as incubators and university–industry liaison units) operationalize these legal frameworks in practice?
-What structural and regulatory gaps hinder the establishment of sustainable and mutually beneficial university–industry partnerships in Algeria?.

Research Hypotheses

Based on the problem statement and objectives, the study advances the following hypotheses:

H1: The Algerian legal framework encourages university–industry collaboration in principle but lacks clear and operational provisions defining partner rights and responsibilities.

H2: The absence of explicit rules on intellectual property ownership and benefit-sharing reduces incentives for economic actors to engage in sustained collaboration with universities.

H3: Institutional structures within Algerian universities operate under fragmented mandates, limiting their capacity to effectively mediate and formalize partnerships with industry.

H4: The gap between policy discourse and practical collaboration outcomes is primarily driven by regulatory ambiguity rather than by a lack of strategic intent.

Objectives of the Study

The main objective of this study is to analyze and assess the effectiveness of the Algerian legal and institutional framework in regulating university–industry collaboration.

More specifically, the study aims to:

-Identify and examine the key laws, decrees, and regulations governing research, innovation, intellectual property, and investment relevant to university–industry collaboration in Algeria.
-Analyze how partner rights, responsibilities, and benefit-sharing mechanisms are addressed within these legal instruments.
-Evaluate the role of university-level institutional structures in implementing and mediating collaboration with economic actors.
-Highlight the legal and institutional gaps that contribute to weak collaboration and limited research commercialization.
-Provide an analytical basis for understanding why existing policy ambitions have not translated into effective university–industry integration.

THE FIRST TOPIC: ANALYTICAL REVIEW OF PREVIOUS STUDIES ON UNIVERSITY–INDUSTRY COLLABORATION

This topic reviews and critically analyzes previous academic studies on university–industry collaboration, intellectual property governance, and partner rights, with the aim of identifying dominant approaches and research gaps.

FIRST REQUIREMENT: UNIVERSITY-INDUSTRY COLLABORATION AS A CHANNEL FOR KNOWLEDGE TRANSFER AND INNOVATION

University–industry collaboration has emerged as a cornerstone of national innovation systems, yet persistent gaps exist between academic institutions and economic partners, particularly in developing countries and the Algerian context. Despite the recognized potential of such collaborations to drive economic growth and technological advancement, empirical evidence reveals that fragmented communication, misaligned incentives, and limited absorptive capacity continue to impede effective partnerships (Rossoni A.L et al, 2023). The Triple Helix model, emphasizing the interaction between universities, industry, and government, is often cited as a theoretical framework for fostering innovation; however, its practical implementation in developing economies faces challenges, including weak relational social capital and insufficient trust between stakeholders (Hojeij.Z, 2024).In Algeria and similar contexts, university–industry partnerships are frequently characterized by the absence of formal R&D policies within industry, a mismatch between academic research outputs and market needs, and a predominant focus on human capital development rather than research-driven innovation (Ejilah I.R. et al, 2025). These systemic barriers are compounded by underdeveloped research capacity in universities and a general reluctance among industrial partners to engage in collaborative ventures (Jonbekova. D. et al, 2024).

SECOND REQUIREMENT: INTELLECTUAL PROPERTY OWNERSHIP AND COMMERCIALIZATION CHALLENGES IN UNIVERSITY-INDUSTRY COLLABORATION

Intellectual property (IP) ownership and exploitation introduce further complexities in academic research within developing innovation systems. The absence of clear and enforceable IP frameworks often leads to disputes over rights to jointly developed innovations, deterring both academic and industrial actors from fully committing to collaborative projects (Girma, Derese, & Abdi,, 2025) . In Algeria, universities typically lack the institutional mechanisms and expertise required to manage IP effectively, resulting in low rates of patenting and technology transfer (Daniel.A & Alves .L, 2019).This situation is further exacerbated by inflexible university procedures and limited funding for the

development and commercialization of research outputs, collectively undermining the potential for successful knowledge exploitation (Jonbekova et al, 2020). Moreover, the lack of trust and transparency in IP negotiations discourages industry from investing in university-generated technologies, perpetuating a cycle of underutilization of academic research in the broader economy (Kleiner-Schaefer & Schaefer, 2022) .

THIRD REQUIREMENT: LEGAL AND INSTITUTIONAL DETERMINANTS OF PARTNER RIGHTS AND OBLIGATIONS IN UNIVERSITY-INDUSTRY COLLABORATION

Legal and institutional frameworks governing partner rights and responsibilities are critical determinants of the success or failure of university–industry collaborations. In many developing countries, including Algeria, legislative gaps and ambiguous policy directives hinder the establishment of robust and mutually beneficial partnerships (Yessimova S.et al, 2024). Although some governments have introduced tax incentives and policy reforms to encourage collaboration, these measures are often undermined by inconsistent enforcement and a lack of alignment with practical realities faced by universities and industry (Jonbekova et al, 2020).The predominance of a statist model, where government exerts significant control over partnership types and purposes, can restrict university autonomy and stifle innovation (Jonbekova. D. et al, 2024) . Additionally, bureaucratic barriers, cultural misalignments, and the absence of intermediary organizations such as technology transfer offices and incubators limit the capacity of both sectors to navigate joint research, IP management, and commercialization effectively (Girma, Derese, & Abdi,, 2025).

FOURTH REQUIREMENT: EMPIRICAL INSIGHTS FROM DEVELOPING ECONOMIES ON UNIVERSITY-INDUSTRY COLLABORATION

Evidence from developing economies highlights the need for context-sensitive approaches to university–industry collaboration. In the Arab world and North Africa, including Algeria, successful partnerships often depend on enabling environments that foster trust, communication, and shared objectives (Hojeij.Z, 2024) . Nevertheless, the literature reveals a persistent gap in systematically exploring the multifaceted dynamics of these collaborations, with most studies focusing on isolated cases or offering generic policy recommendations (Rossoni A.L et al, 2023). The Algerian context, in particular, suffers from a scarcity of empirical research on the effectiveness of existing legal and institutional frameworks, knowledge transfer mechanisms, and the outcomes of collaborative

innovation (Yessimova S.et al, 2024).This lack of comprehensive, context-specific analysis limits policymakers' and practitioners' ability to design interventions tailored to Algeria's innovation system.

FIFTH REQUIREMENT: SYNTHESIS OF THE LITERATURE AND IDENTIFICATION OF THE RESEARCH GAP

The literature collectively reveals a complex interplay of structural, institutional, and cultural factors that maintain the gap between universities and economic/industrial partners. Key tensions include the dual focus on transaction-centered (IP and licensing) versus relationship-centered (trust and human capital) collaboration models, the potential for rigid IP frameworks to crowd out education- and capability-oriented interactions, and the limited empirical assessment of how contractual and legal frameworks redistribute rights, responsibilities, and risks. For Algeria, this analysis points to a significant research gap: the absence of integrated, empirical studies evaluating the effectiveness of university–industry collaboration models, particularly regarding knowledge commercialization, IP exploitation, and the alignment of legal and institutional arrangements with stakeholder needs. Addressing this gap is essential to advance both theoretical understanding and practical outcomes within the Algerian innovation ecosystem.

THE SECOND TOPIC: THEORETICAL AND ANALYTICAL FRAMEWORK FOR INTERPRETING UNIVERSITY-INDUSTRY COLLABORATION

This topic presents the theoretical models and analytical frameworks adopted in this study to interpret university–industry collaboration and analyze the Algerian legal and institutional context.

FIRST REQUIREMENT: TYPOLIGIES AND MODALITIES OF UNIVERSITY-INDUSTRY COLLABORATION

University–industry collaboration (UIC) is commonly conceptualized as encompassing three broad forms educational collaboration, research-related collaboration, and academic entrepreneurship ,each operationalized through specific channels of interaction between universities and firms (Nsanzumuhire & Groot, 2020) Educational forms of UIC include joint curriculum development, student projects, internships, work placements, and executive or professional education programs that aim to align skills provision and human capital formation with evolving industrial needs (Tereshchenko et al, 2024) .Research-based collaboration manifests through joint and contract R&D projects, collaborative

research consortia, and access to university laboratories and scientific infrastructure, enabling firms to tap into frontier knowledge while providing academics with exposure to real-world problems (Gallagher et al, 2023) . Service-oriented and training-related channels comprise consultancy, problem-solving services, tailored training for company staff, and knowledge transfer programs, which often form the most frequent and pragmatic interfaces between universities and firms in practice (Tereshchenko et al, 2024) . Entrepreneurial and commercialization-oriented activities include the creation of university spin-offs, incubation and acceleration programs, joint ventures, and licensing or co-ownership of patents arising from collaborative research, reflecting a more formalized technology transfer logic (Romero Sanchez et al, 2024). Bibliometric and review studies show that, across a wide range of contexts, firms and academics tend to rely more heavily on non-commercial channels—such as joint research, consultancy, and educational interactions—than on formal IP-based mechanisms like patents and licenses, which are typically perceived as more complex and resource-intensive to manage (Rossoni A.L et al, 2023). In emerging and developing economies, UIC portfolios are further shaped by institutional constraints, with collaborations frequently concentrated in low-risk, non-commercial forms such as contract research, consultancy, and training, while systematic exploitation of patents, licensing, and spin-offs remains relatively limited (Carla Mascarenhas et al, 2018). Within the Arab region, recent reviews indicate that UIC is dominated by student internships, corporate training, short-term projects, and ad hoc research collaborations, with comparatively weak ecosystems for technology transfer offices, incubation, and commercialization of university-generated intellectual property (Hojeij.Z, 2024). In Algeria specifically, qualitative evidence from university research laboratories suggests that collaboration with industry is largely oriented toward research projects and training initiatives tailored to market needs, underpinned by social and cognitive proximity rather than formalized entrepreneurial arrangements or IP-based transactions (Naga & Amghar, 2024) .Complementary research on Algerian university–company relations further reports that the overall level of partnership is low and characterized by fragile, superficial interactions, implying that more advanced entrepreneurial channels such as spin-offs, incubation, and licensing have yet to become central pillars of the national UIC landscape (Nahla, 2023).

SECOND REQUIREMENT: GOVERNANCE MECHANISMS FOR INTELLECTUAL PROPERTY MANAGEMENT IN UNIVERSITY-INDUSTRY COLLABORATION

Intellectual property (IP) management constitutes a central pillar in university–industry collaboration, as it governs the ownership, protection, and exploitation of knowledge generated through joint activities. The literature commonly identifies patenting, licensing agreements, joint ownership of research outputs, and spin-off creation as the principal mechanisms through which academic knowledge is commercialized in collaboration with industry, with contractual clarity being essential to define rights, revenue sharing, and responsibilities among partners (Carla Mascarenhas et al, 2018) .Formal IP arrangements are widely recognized as instruments that can reduce uncertainty and facilitate technology transfer by providing legal protection and incentives for investment in innovation (Romero Sanchez et al, 2024). However, empirical studies consistently report that the negotiation and management of IP rights represent one of the most complex and contentious aspects of university–industry collaboration, often generating delays, disputes, and reluctance to engage in long-term partnerships when governance structures are weak or ambiguous (Rossoni A.L et al, 2023).

Beyond formal ownership, effective commercialization depends on organizational capabilities such as technology transfer offices, legal expertise, market knowledge, and alignment between academic and industrial objectives. Reviews of university–industry collaboration underline that, in many contexts, technology transfer offices struggle with limited resources, insufficient professionalization, and weak integration with firms' innovation strategies, which constrains their ability to support patent licensing and spin-off development effectively (Carla Mascarenhas et al, 2018) .As a result, firms frequently prefer informal arrangements, direct project funding, or consultancy-based collaboration rather than engaging in complex IP-based transactions, particularly when the expected commercial returns are uncertain (Rossoni A.L et al, 2023).

In the Arab region, recent analyses highlight that although national policies increasingly emphasize intellectual property protection and knowledge commercialization, practical implementation remains fragmented. University–industry collaboration is often characterized by limited institutional support for IP management, weak technology transfer infrastructures, and tensions between academic incentives for publication and industrial demands for proprietary protection. (Hojeij.Z, 2024). Within the Algerian context, available empirical evidence suggests that collaboration between universities and firms is predominantly oriented toward research projects and training activities, while structured mechanisms for patent licensing, spin-off creation, and systematic exploitation of university-owned intellectual property remain marginal (Naga & Amghar, 2024) . Complementary studies further indicate that the absence of clear frameworks defining partner rights and responsibilities particularly concerning

ownership of research outputs and commercialization pathways contributes to fragile and low-intensity partnerships, limiting the translation of academic knowledge into marketable innovations (Nahla, 2023).

THIRD REQUIREMENT: NATIONAL LEGAL AND INSTITUTIONAL ARRANGEMENTS SHAPING PARTNER RIGHTS AND RESPONSABILITIES IN ALGERIA

Following the general overview of university–industry collaboration (UIC) mechanisms, it is important to consider the specific legal and institutional context of Algeria, which shapes the realization and effectiveness of these collaborations. To date, there is no research that systematically analyzes Algerian legal texts governing UIC; existing studies focus primarily on governance structures and observed collaboration practices rather than a detailed doctrinal examination of statutes and decrees (Benrami & Boukharim, 2025) .

Algerian policies, particularly those of the Ministry of Higher Education and Scientific Research, position scientific research and its commercialization at the center of university reform, mandating national R&D programs and designated funding lines to encourage universities to enter cooperation agreements with local industry and start-ups, aiming to support innovation and technology transfer (Benrami & Boukharim, 2025). These policies define universities as public institutions with dual scientific and economic missions, expected to mobilize research resources—including human capital, laboratories, and equipment—in contract-based projects with firms, while the Ministry retains substantial authority over priorities, funding allocation, and institutional agreement approvals (Benrami & Boukharim, 2025).

Empirical studies show that, despite repeated references in official discourses and legislative texts, actual partnerships in Algeria tend to be of low intensity, fragile, and superficial. Rights and obligations of universities, firms, and individual researchers in areas such as intellectual property, revenue sharing, and confidentiality are weakly formalized (Nahla, 2023). Qualitative evidence from Algerian research laboratories indicates that collaboration practices rely more on informal social and cognitive proximity than on standardized contractual or institutional templates, with IP ownership, liability, and publication rights frequently negotiated ad hoc at the project level (Naga & Amghar, 2024) .

Comparative governance literature highlights that detailed contracts and transparent intellectual property clauses can reduce disputes, clarify roles and responsibilities, and facilitate trust, licensing, and revenue-sharing arrangements, whereas ambiguous or overly bureaucratic rules reduce incentives for collaboration

and complicate commercialization outcomes (Rybnicek. R. & Königsgruber. R, 2018) . From this perspective, the Algerian framework reflects a tension between centrally driven reforms promoting UIC and the absence—both at institutional and project levels—of consistently implemented mechanisms for defining, protecting, and enforcing partner rights, which contributes to the persistent gap between formal policy objectives and the limited depth of actual collaboration (Benrami & Boukharim, 2025).

FOURTH REQUIREMENT: OPERATIONAL AND INSTITUTIONAL SUPPORTS STRUCTURES FOR UNIVERSITY-INDUSTRY COLLABORATION IN ALGERIA

In Algeria, the regulatory and institutional landscape governing university–industry collaboration (UIC) is multifaceted, encompassing laws on higher education, scientific research, investment, and intellectual property, as well as dedicated university structures facilitating engagement with the economic sector. Law No. 21-15 on Scientific Research and Technological Development establishes universities' dual mission as scientific and economic actors, emphasizing the valorization of research outputs and their transfer to the industrial sector (Benrami & Boukharim, 2025) . Complementing this, investment legislation, including Law No. 06-01 on investment promotion, provides legal channels for private sector participation in research projects, start-ups, and university-linked enterprises, while IP statutes—notably Law No. 03-07 on Copyright and Related Rights and the Patent and Industrial Invention Code—govern the registration, licensing, and ownership of intellectual property generated within academic institutions (Belgoum & Benssaleh, 2023) .

Operationalizing these legal provisions, most Algerian universities host incubators, innovation centers, and entrepreneurial hubs, which facilitate the commercialization of research outputs and the creation of student or faculty start-ups (Lahlou, 2025) . A central actor in coordinating these efforts is the Bureau de Liaison Entreprise-Université (BLEU), mandated to manage university-industry relations, support contract negotiations, oversee technology transfer, and align institutional initiatives with national R&D priorities (Guemmar, 2023). These entities interface with ministerial programs and funding lines designed to channel research activities toward socio-economic needs, providing a structured environment for joint projects, consultancy, and commercialization activities (Mefedjekh & Bouarfa, 2025).

Despite the formal regulatory framework, empirical evidence indicates that implementation gaps persist, with collaboration often reliant on ad hoc agreements and personal networks rather than standardized procedures for IP management,

licensing, revenue sharing, and dispute resolution (Naga & Amghar, 2024).Moreover, limited staffing, insufficient legal guidance, and fragmented institutional coordination reduce the effectiveness of incubators and BLEU offices, constraining the capacity of universities to engage systematically with industrial partners (Mohammed, Guermat, & Zohra, 2020) (Saad et al., 2020; Saad & Zawdie, 2005). Addressing these gaps requires clearer operational rules for IP and investment management, strengthened internal governance within universities, and enhanced integration of national policies with institutional practices, thereby fostering more robust, legally secure, and sustainable university–industry partnerships in Algeria.

FIFTH REQUIREMENT: INTERNATIONAL GOVERNANCE MODELS OF UNIVERSITY-INDUSTRY COLLABORATION AND THEIR RELEVANCE TO ALGERIA

University–industry (UI) collaboration is structured globally through a combination of legal frameworks, organizational mechanisms, and contractual governance, which together define the allocation of intellectual property (IP) rights and responsibilities among universities, researchers, firms, and the state.

The Triple Helix model conceptualizes U–I–government interactions as overlapping institutional spheres, where universities increasingly assume entrepreneurial roles while governments act as regulators and co-innovators rather than mere funders (Abbas A et al, 2018) . Empirical evidence from China shows that regional Triple Helix systems monitor patent output and co-patenting to guide collaborative innovation, with government influencing IP allocation through targeted funding and evaluation criteria (Tao et al, 2021). Similarly, case studies in Brazil demonstrate how national IP legislation enables universities to patent and license inventions to firms while government support instruments mediate commercialization conditions (Polyana de Almeida Borges et al, 2020)

Bayh–Dole–type legislative regimes assign ownership of IP from publicly funded research to universities or public research organizations, often subject to government reservations. In the United States, universities must disclose inventions, file patents, grant government “grant-back” licenses, and allow potential “march-in” rights if inventions are not adequately commercialized (Shane, 2004) .Evidence shows that this framework increased university patenting and licensing income, although some universities emphasized revenue generation over broad knowledge dissemination (Jerry Thursby & Marie Thursby, 2003). Bayh–Dole-inspired reforms in Malaysia and China similarly enhanced university patenting and technology transfer, provided sufficient TTO capacity and researcher incentives existed (Wong & Salmin, 2016) .

Technology Transfer Offices (TTOs) act as organizational intermediaries that manage invention disclosure, patent evaluation, licensing negotiation, and spin-off support (Carter-Johnson, 2020) . Standardized procedures for IP ownership, patent registration, licensing, revenue sharing, confidentiality, and dispute resolution improve trust, reduce negotiation costs, and facilitate commercialization (Mohammed Abdul Fasi, 2022). Evidence from Portugal highlights that flexible TTO procedures significantly enhance licensing outputs (Jerry Thursby & Marie Thursby, 2003).In Italy, liaison structures between universities and industry improve collaboration intensity and innovation outcomes (Carter-Johnson, 2020) .

Contractual governance mechanisms complement statutory and organizational frameworks by specifying IP rights, licensing terms, revenue sharing, publication clauses, and liability responsibilities in collaborative research (Bstieler, .Hemmert, & .Barczak, 2015) Comparative studies indicate that transparent, flexible contracts, combined with shared governance structures, foster trust and innovation, particularly in sectors with high IP stakes such as biotechnology (Tolin & Andrea, 2025). Conversely, rigid institutional policies can deter firms from collaboration, especially when sector-specific needs are not accommodated (Daniel.A & Alves .L, 2019).

From a comparative perspective, successful UI collaboration depends on: (i) clear statutory IP allocation rules integrated with national legislation (Wei Yi & Long, 2021), (ii) professional institutional intermediaries such as TTOs or liaison units (Mohammed Abdul Fasi, 2022), (iii) aligned incentives for researchers and firms (Bstieler, .Hemmert, & .Barczak, 2015), and (iv) trust and shared decision-making mechanisms that mitigate opportunistic behavior (Tolin & Andrea, 2025). These insights can guide the adaptation of global models to Algeria, considering the central role of the state, nascent university innovation structures (incubators and BLEU units), and current gaps in regulatory clarity on IP and partner responsibilities.

THIRD TOPIC : RESEARCH APPROACH AND OUTCOMES

This section outlines the research design and analytical approach employed to investigate the legal and institutional structures shaping university–industry collaboration in Algeria. It highlights key findings concerning gaps and ambiguities in the allocation of rights, responsibilities, and operational procedures between universities and their economic partners. The section further frames a critical discussion of these findings, emphasizing their implications for fostering more effective, transparent, and sustainable collaboration.

FIRST REQUIREMENT: METHODOLOGY

This study adopts a qualitative, analytical approach to examine the legal and institutional framework governing university–industry collaboration (UIC) in Algeria. The research does not involve primary field data collection; rather, it relies on systematic document analysis of existing Algerian laws, decrees, regulations, and institutional guidelines that define the rights and responsibilities of universities and economic/industrial partners.

The primary sources include:

1-Framework laws on higher education and scientific research (e.g., Law No. 08-04 on higher education, Law No. 21-15 on scientific research and technological development).

2-Intellectual property legislation (e.g., Algerian IP Code and associated decrees regulating patents, copyrights, and technology transfer).

3-Investment and commercial laws relevant to university spin-offs, incubators, and industrial partnerships.

4-Institutional documents from universities, including internal regulations for Technology Transfer Offices (TTOs), innovation centers, liaison units (BLEU), and incubators.

The study employs **content analysis** to identify:

-The legal provisions that define ownership, licensing, revenue-sharing, and confidentiality.

-Institutional mechanisms that operationalize these provisions in university–industry collaborations.

-Gaps, ambiguities, and inconsistencies in the regulatory framework that may hinder effective cooperation.

All findings are synthesized to provide a comprehensive picture of Algeria's current UIC governance, highlighting areas where international models (Triple Helix, Bayh–Dole, TTO frameworks) could inform policy adaptation while remaining sensitive to local legal, institutional, and economic contexts.

SECOND REQUIREMENT: RESULTS

The analysis of the Algerian legal and institutional framework for university–industry collaboration reveals several critical patterns and gaps. First, while laws such as the Higher Education Framework Law and Law No. 21-15 on Scientific Research and Technological Development provide a broad mandate for universities to engage in economic and technological activities, they lack detailed provisions defining the precise allocation of intellectual property rights, revenue-sharing

mechanisms, and liability between universities, researchers, and industry partners. Second, institutional structures within universities—such as incubators and the Bureau Liaison et d'Exploitation Universitaire (BLEU)—exist to operationalize collaboration, but their mandates, authority, and procedures are inconsistently defined, resulting in uneven capacity to manage patents, licenses, and commercialization processes. Third, collaboration practices observed across Algerian universities remain largely informal and project-specific, relying on ad hoc agreements and personal networks rather than standardized contracts or robust TTO-like procedures. Fourth, the interaction between national policies, university regulations, and institutional practices shows a clear **implementation gap**: ambitious reforms encouraging technology transfer and innovation are not fully realized at the operational level due to fragmented governance, unclear IP ownership, and weak enforcement mechanisms. Overall, the results highlight a **discrepancy between the formal legal framework and actual collaboration outcomes**, indicating that without clarification of partner rights, standardized institutional procedures, and strengthened operational capacity, university–industry partnerships in Algeria are likely to remain low-intensity, fragile, and limited in scope.

THIRD REQUIREMENT: DISCUSSION

The study reveals that university–industry collaboration in Algeria suffers from a gap between formal legal frameworks and practical implementation. While existing laws grant universities clear authority over technology transfer and intellectual property management, the absence of precise mechanisms to operationalize rights and responsibilities limits the depth and effectiveness of partnerships. International models, such as the Triple Helix and Bayh–Dole frameworks, demonstrate that successful collaboration relies on intermediary institutional structures, well-defined procedures, and aligned incentives—elements that remain underdeveloped in Algeria despite the presence of BLEU liaison units and university incubators. Centralization and bureaucratic rigidity further hinder the establishment of flexible and effective partnerships, leading to reliance on informal arrangements and personal networks rather than structured contracts. The findings indicate that enhancing collaboration requires integrating legal provisions, institutional mechanisms, and clear contractual models with effective enforcement and appropriate incentives, thereby aligning statutory objectives with practical operations and promoting technology transfer and innovation.

Conclusion:

This study set out to examine the legal and institutional foundations governing university–industry collaboration in Algeria, with a particular focus on

how partner rights, responsibilities, and intellectual property arrangements are defined and operationalized. The analysis demonstrates that, despite strong political discourse and a growing body of legislation promoting innovation, research valorization, and entrepreneurship, the Algerian framework remains characterized by regulatory ambiguity and fragmented institutional implementation.

The findings confirm that Algerian universities are formally recognized as key actors in economic development and knowledge commercialization. However, existing legal texts provide only general orientations and lack detailed, operational rules regarding intellectual property ownership, benefit-sharing mechanisms, risk allocation, and long-term partner commitments. This absence of clarity constrains trust between universities and economic actors and limits incentives for sustained industrial engagement, thereby reinforcing low-intensity and short-term collaboration patterns.

At the institutional level, structures such as incubators and the Bureau de Liaison Entreprise-Université (BLEU) represent important steps toward operationalizing university–industry collaboration. Nevertheless, their effectiveness is undermined by fragmented mandates, limited legal authority, and insufficient professional capacity in intellectual property management and technology transfer. As a result, collaboration practices remain largely informal and project-specific, relying on personal networks rather than standardized contractual and governance mechanisms.

From a theoretical perspective, the Algerian case highlights the limits of adopting innovation-oriented reforms without embedding them within coherent legal and institutional architectures. International experiences inspired by the Triple Helix and Bayh–Dole–type frameworks illustrate that successful university–industry collaboration requires an integrated system combining clear statutory rules, professional intermediary organizations, aligned incentives, and transparent contractual governance. The absence of such integration in Algeria explains the persistent gap between ambitious policy objectives and modest practical outcomes.

Overall, the study underscores that the challenge facing university–industry collaboration in Algeria is not a lack of strategic intent, but rather the absence of a coherent and enforceable framework that clearly defines partner rights and responsibilities. Addressing this gap is essential for transforming universities from peripheral contributors into central engines of innovation, enabling effective knowledge commercialization, and fostering sustainable, trust-based partnerships with the productive sector. This analysis provides a foundation for future policy reforms and empirical research aimed at strengthening Algeria’s national innovation system.

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