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Investment in Intellectual Property and Economic Freedom in the Context of Current Transformations: An Empirical Study of Algeria (2018–2023)

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Abstract---This study aims to measure investment in intellectual property and economic freedom in the context of Algeria's current transformations from 2018–2023. The methodology employed is multiple linear regression, which relies on the business development index and the knowledge and technology outputs indicator for Algeria as the independent variables, with the property rights index represented as the dependent variable. To achieve an optimal solution for advancing economic freedom, enhancing intellectual property acquisition is necessary. Accordingly, this study aims to examine the variables under consideration, focusing on the adoption of economic freedom in Algeria and its relationship with investment in intellectual property. The findings reveal a significant impact among the study variables in Algeria, with the regression model proving statistically significant.

Keywords---Intellectual property, economic freedom, transformation, cost.

Introduction

Intellectual property has come to occupy a central position in the process of economic development, manifesting in the market as inventions, products, trademarks, designs, and innovative models that emerge almost daily as a result of continuous human creativity and innovation. Economic freedom

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functions as a compass that directs investment in human resources and supports their development, which necessitates the endeavour to diagnose this phenomenon.

Like other countries around the globe, algeria strives diligently to keep pace with the current era through the adoption of applications that aid in market regulation. Given that intellectual property constitutes the fundamental driver of this market, Algeria finds itself advancing in terms of economic standing and overall growth.

From the preceding discussion, the research problem can be formulated as the following question:
What is the nature of investment in intellectual property and economic freedom in the context of Algeria's current transformations during the period of 2018–2023?
To answer this research problem, the following two hypotheses were established:

- There is an insignificant effect of property rights on Algeria's business development and knowledge and technology outputs.
- There is a significant effect of property rights on Algeria's business development and knowledge and technology outputs.

Significance of the Study
The significance of this study lies in its examination of economic freedom and its relationship with investment in intellectual property, which is of critical importance in enhancing market growth and adapting to the requirements of the modern era.

Objectives of the Study
This study aims to investigate the impact of investment in intellectual property and economic freedom on Algeria's current transformations from 2018 to 2023.

Methodology of the Study
The present research employs a descriptive-analytical approach to present and analyse the development of the study variables, as well as an empirical econometric approach, utilising statistical techniques to measure the impact of investment in intellectual property and economic freedom within the framework of Algeria's current transformations during the period of 2018–2023. The analysis was conducted via SPSS v26 software.

Research Structure
This paper is divided into two main sections. The first section is devoted to the theoretical framework and analysis of the relationships among the variables. In contrast, the second section focuses on the empirical study of the effects of investment in intellectual property and economic freedom in the context of Algeria's current transformations from 2018--2023.

Previous studies

- A study by Lakhal El Amine (Amine, 2022) confirmed that economic freedom is the essence of a market economy and has an impact on economic growth in terms of individuals' ability to maximise their benefits without preexisting constraints. This study further clarified the relationships between economic freedom, represented by government integrity, financial freedom, and monetary freedom, and economic growth in Algeria. The study employed an econometric methodology based on the autoregressive distributed lag (ARDL) model. The findings revealed a significant adverse effect of government integrity on growth, whereas both financial and monetary freedom had a positive effect.
- Study by Abdel Laoui Samir (Samir & Eddine, September 2022): This study aimed to investigate the relationship between property rights systems and economic performance, examining various indicators, strategies, and reforms implemented to increase Algeria's economic growth during the period 2009–2021. The study employed an econometric methodology with the ARDL

model. The results demonstrated that intellectual property rights and intellectual property transfer had positive effects on GDP per capita in both the short and long term. In contrast, material property rights had a negative impact.

- Study by Haddad Zina (Zina, December 2016): This study confirmed that the post-1980s period represents a significant stage in Algeria's history across various levels, particularly in terms of economic policy based on the market economy, which introduced the country into a new era. It encompasses principles and foundations such as intellectual property freedom, freedom to engage in economic activities, perfect competition, and consumer freedom in the market. These principles and freedoms were embedded within Algerian legislation by incorporating them into legal provisions, particularly Article 43.
- Study by Leila Ben Halima (Halima, 2021): This study confirmed that the World Intellectual Property Organisation (WIPO), as part of the specialised agencies of the United Nations system, works to protect and coordinate intellectual property rights. It also provides information on intellectual property and awareness-raising tools to all segments of society, ensuring recognition and a proper understanding of its benefits while maintaining continuity in creativity and innovation. This, in turn, has a positive effect on the economic performance of countries.

Distinctive features of the present study compared with those of previous studies

With respect to the study environment, the current research is analytical, econometric, and applied in nature. In terms of the application sector, it employs a descriptive–analytical approach, which is considered most suitable for study and analysis. The sample included questionnaires and international indicators pertinent to Algeria. With respect to the objective, previous studies have tended to be general, linking independent variables with other related variables. This study explicitly utilises international indicators for Algeria and differs by clearly focusing on the relationships and significant impacts between the independent and dependent variables.

Section One: Theoretical Framework

1. Concept of Intellectual Property:

Intellectual property refers to the legal rights that result from intellectual activity in the industrial, scientific, literary, and artistic fields, which enable their holders to benefit from their creations and innovations.

Intellectual property is defined as a type of property that has emerged in recent centuries as a result of scientific development and global industrial, technological, and commercial progress, particularly during an era marked by widespread flourishing in various sciences and arts (Mohamed, Keniwa, & Doudi, March 2018). It can also be defined as the legal rules established to protect the intellectual creativity embodied in tangible works, namely, artistic and literary intellectual property, and to safeguard moral rights. The Egyptian Centre for Intellectual Property and Information Technology defines it as everything produced and created by the human mind and intellect, ideas that take concrete forms that can be protected, consisting of intellectual and mental creations, and innovations, such as inventions, trademarks, designs, and models (Zidan, 2020).

Moreover, intellectual property is composed of two words: "intellect" and "property." Intellect or thinking involves using the mind concerning a topic or matter of human interest, with mental effort directed towards achieving a specific purpose that benefits or serves society, such as authorship or invention. From this perspective, human thought is in a state of continuous development, continually improving and refining, thereby constituting an inexhaustible wealth as long as humanity exists. Property typically refers to tangible assets, such as real estate or movable goods. While ownership of physical things appears natural and familiar, questions arise regarding the ownership of intellectual production (Al-Zein, 15/03/2008).

In summary, intellectual property is the creation of the mind's ideas crystallised into tangible forms and placed by individuals on a path of practical application.

2. Relationship between Innovation and Intellectual Property Rights

Intellectual property laws enable individuals and organisations to acquire rights over innovative and creative products. Owning intellectual assets restricts competitors' ability to use these assets freely, allowing companies to reap the benefits of their innovations and address the fundamental issue of innovation ownership. Among the most suitable forms of intellectual property for resolving ownership challenges are patents, utility models, industrial designs, plant variety rights, copyrights, trade secrets, and others. Intellectual property is crucial for securing returns on investment in research and development activities, with its importance varying significantly across different industries. Intellectual property rights play a central role in organisational business models, highlighting the indirect role played by other forms of intellectual property in promoting innovation (Jamila & Assia, 2017).

In summary, the relationship between innovation and intellectual property rights lies in the fact that any innovative product restricts competitors' ability to benefit from it without compensation.

3. Concept of Economic Freedom

Economic freedom, according to the Heritage Foundation, is the fundamental right of every individual to control their labour and property. In an economically free society, individuals are free to work, produce, consume, and invest in any manner they choose. Governments permit the free movement of labour, capital, and goods, refraining from coercion and restrictions beyond what is necessary to protect and preserve freedom itself (Antar & Kamal, 2024).

It can also be defined as the facilitation of individuals' rights in ownership, labour, contracting, production, and consumption or as the absolute recognition of individuals' rights to acquire and expend wealth in the manner and form they see fit. Economic freedom opens all doors for individuals in the economic domain on the basis of core principles, including unlimited individual ownership and allowing every person to utilise their property and capabilities as they desire, by various means and methods, while guaranteeing freedom of consumption and expenditure on needs and desires regardless of their nature (Tannash & Al-Badarin, 2017).

Economic freedom is a decisive element for human welfare and a vital lifeline for maintaining a free civil society. As stated in economic freedom index reports, the best path to prosperity is freedom, which allows individuals to independently determine the best ways to achieve their dreams, aspirations, and family priorities (Iman & Al-Karim, April 2020).

In summary, economic freedom can be described as granting every individual the liberty to exploit all their possessions, thus guaranteeing freedom of disposition.

4. Adoption of Economic Freedom in Algeria

The concept of economic freedom is closely linked to the policy of economic liberalisation, which dates back to the late 1980s and early 1990s. Algeria witnessed a series of legislative texts embodying economic openness, although the policy was not explicitly declared at first (Directive Institutions Law 88--12). The 1989 Constitution subsequently adopted this orientation, explicitly guaranteeing private ownership, thus laying the groundwork for economic freedom. This was followed by a series of legal reforms related to economic liberalisation, including the 1989 Prices Law, which introduced price freedom, and the 1990 Monetary and Credit Law, which opened the economy to the private sector in banking and financial institutions.

The promulgation of the Legislative Decree of 1993 enabled the free establishment of joint-stock companies, thereby entrenching investment freedom and introducing numerous guarantees that promote economic freedom. This was followed by further laws, such as the Investment Promotion Law 16--09, amendments to commercial law that allowed joint-stock companies, and the decree establishing the stock exchange. The Competition Law 06--95 provided regulatory rules and safeguards for competition.

The 1996 Constitution enshrined freedom of trade and industry, followed by numerous laws that strengthened the open economic stance in other market sectors, culminating in the 2016 constitutional amendment that reaffirmed the freedoms of investment and trade (Samia, December 2019).

In summary, the adoption of economic freedom in Algeria was enshrined in the 1989 Constitution, supported by economic laws and reforms that guaranteed this freedom.

5. Investment in Intellectual Property and Economic Freedom
Investment in intellectual property involves a significant relationship with two prevailing perspectives. The first, favouring developed countries, posits a positive correlation between the strength of intellectual property protection systems and foreign capital inflows, thereby facilitating increased technology transfer from developed to developing countries. A weak protection system heightens the likelihood of counterfeiting and infringement, rendering the country less attractive for investment, particularly in pharmaceuticals, health products, and electronic equipment. Strong protection can encourage multinational corporations to licence production within these countries, which are confident that their intellectual property will be safeguarded. Strengthening industrial property rights protection systems fosters technology transfer from developed to developing countries by promoting the disclosure of innovations and enhancing local firms' access to new technologies.
The second perspective, supportive of developing countries, challenges this view on the basis of studies indicating that investment has remained weak even in countries with strong industrial property rights systems. Despite notable advancements in industrial property protection, developing countries have failed to attract foreign companies, especially in vital industries, consequently missing out on technology transfer. Thus, intellectual property contributes to creating a conducive investment climate through the enactment and regulation of effective protection legislation (Nadia, 2021).
With respect to economic freedom, there is a broad consensus among economists and policymakers concerning its fundamental importance in stimulating investors. It is well established that markets characterised by free competition provide greater opportunities for investors to operate efficiently, innovate, and realise profits, whereas excessive regulation results in inefficient resource allocation, leading to deteriorated investment performance and reduced capacity to transfer benefits such as technology and skills. Economic freedom serves as a determinant for attracting investment, surpassing traditional economic factors. Explanations of the impact of economic freedom on investment attraction focus on the role of the rule of law, particularly the effects of property rights and freedom from corruption on investment inflows (Siham, 2016/2017).
Investment in intellectual property and economic freedom stimulates innovation, enhancing the ability of investors, as well as local and foreign institutions, to achieve their desired objectives.

Section Two: Measuring Investment in Intellectual Property and Economic Freedom amid Algeria's Current Transformations (2018–2023)

1. Model and Study Variables
To assess investment in intellectual property and economic freedom amid Algeria's current transformations, annual time series data for the period of 2018--2023 were utilised. Data on Algeria's Global Innovation Index were obtained from the 2023 Global Innovation Index, 16th edition, accessed on February 14 14, 2025, via https://www.wipo.int. Two variables from this index were adopted: business sophistication (DDA) and knowledge and technology outputs (RCET). Data on Algeria's Economic Freedom Index were sourced from the Arab Economic Competitiveness Report, Issue 7, 2023, by the Arab Monetary Fund, accessed on February 13 13, 2025, via https://www.amf.org.ae. The study utilised one variable from this index, Property Rights (DPI).
The study variables are denoted as follows:

- LEDA: Economic Freedom Index for Algeria, including:
    - DPI: Property Rights
- IMPA: Global Innovation Index for Algeria, including the following:
    - DDA: Business sophistication
    - RCET: Knowledge and Technology Output

1. **Analysis of Results**

Table 01:

Descriptive Statistics. Please provide the data or contents of Table 01 for continuing the translation of the results analysis.

Statistiques descriptives

	Moyenne	Ecart type	N
DPI	31,8400	4,28054	5
DDA	123,20	3,033	5
RCET	121,80	6,140	5

(Source: SPSSv26 outputs).

The previous table presents descriptive statistics, indicating a sample size of five. The arithmetic means for business sophistication, knowledge and technology outputs, and property rights were 123.20, 121.80, and 31.84, respectively. The standard deviations for these variables were 3.033, 6.140, and 4.28054, respectively. These variables were entered into the regression model as dependent and independent variables.

Table 2:

Correlation Matrix

Corrélations

		DPI	DDA	RCET
Corrélation de Pearson	DPI	1,000	,028	,205
	DDA	,028	1,000	,279
	RCET	,205	,279	1,000
Sig. (unilatéral)	DPI	.	,482	,370
	DDA	,482	.	,325
	RCET	,370	,325	.
N	DPI	5	5	5
	DDA	5	5	5
	RCET	5	5	5

(Source: SPSSv26 outputs)

The previous table shows the correlation matrix among the variables of the regression model. The highest correlation coefficient was between property rights and knowledge and technology outputs, with a value of 0.205 and a significance level of less than 0.01. The correlation coefficient between property rights and business sophistication was 0.028, which was also significant at less than 0.01.

Table 03:

Variables included in the regression equation (source: SPSSv26 outputs)

Variables introduites/éliminées[a]

Modèle	Variables introduites	Variables éliminées	Méthode
1	RCET, DDA[b]		Introduire

a. Variable dépendante : DPI

b. Toutes les variables demandées ont été introduites.

(Source: SPSSv26 outputs)

The previous table displays the names of the variables included in the regression equation, where property rights serve as the dependent variable and business sophistication, knowledge, and technology outputs serve as independent variables. The analysis did not exclude any variables, and the method used in the model was standard regression.

Table 04:

Pearson correlation coefficient

Récapitulatif des modèles[b]

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,207[a]	,043	,914	5,92225

a. Prédicteurs : (Constante), RCET, DDA

b. Variable dépendante : DPI

(Source: SPSSv26 outputs)

The previous table shows the Pearson correlation coefficient between the dependent variable and the independent variables, with a moderate value of 0.207. The coefficient of determination (R^2) was 0.043, and the adjusted R^2 was 0.914, indicating that the independent variables explained 91% of the variance in property rights.

Table 5:

ANOVAanalysis results

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	3,146	2	1,573	,045	,957[b]
	de Student	70,146	2	35,073		
	Total	73,292	4			

a. Variable dépendante : DPI

b. Prédicteurs : (Constante), RCET, DDA

(Source: SPSSv26 outputs)

The previous table illustrates the ANOVA results for testing the significance of the regression. The significance value (sig) is 0.957, which is greater than 0.01; therefore, the null hypothesis cannot be rejected, and the regression is not significant. Consequently, there is no statistically significant effect of the independent variables on the dependent variable, and the prediction of the dependent variable on the basis of these independent variables is not supported.

Table 6:

Standardised and Unstandardised Regression Coefficients

Coefficients[a]

Modèle	Coefficients non standardisés		Coefficients standardisés			Statistiques de colinéarité	
	B	Erreur standard	Bêta	t	Sig.	Tolérance	VIF
(Constante)	8,125	154,004		,053	,963		
DDA	,045	1,017	,032	,044	,969	,922	1,085
RCET	,149	,502	,214	,297	,795	,922	1,085

a. Variable dépendante : DPI

(Source: SPSSv26 outputs)

The previous table presents the standardised and unstandardised regression coefficients, standard errors, and t test values, along with their p values (indicating statistical significance), variance inflation factors (VIFs), and tolerance values. Since tolerance is calculated as 1/VIF, the data indicate no multicollinearity problem among the variables, as all the VIF values are less than 3. This table also facilitates the derivation of the regression equation:

Predicted Property Rights (JS) = e + 0.214(RCET) + 0.032(DDA)

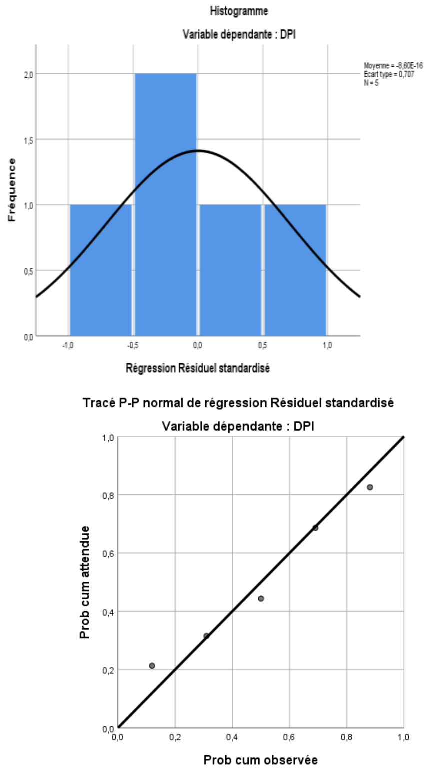

Figure 1: *Residual Distribution and Data Aggregation Test Results*

The preceding figures illustrate the moderate distribution of residuals and the clustering of data around a straight line, indicating that the residuals follow a normal distribution, which is a prerequisite for the validity of regression analysis.

Conclusion

This study aimed to investigate the relationship between investment in intellectual property and economic freedom in Algeria from 2018–2023, utilising an econometric approach based on multiple regression methodology. The Property Rights Index for Algeria was used as the dependent variable, which was explained by the independent variables of business sophistication and knowledge and technology outputs. First, the study reviewed previous research and theoretical concepts related to the study variables. The following results were reached:

- There is a positive relationship between the study variables.
- The regression model is statistically significant, indicating that the independent variables have a significant effect on the dependent variable.
- The independent variables have a significant effect on the dependent variable.
- No multicollinearity exists among the study variables.
- Accordingly, the null hypothesis is rejected, and the alternative hypothesis is accepted.

On the basis of these results, the following recommendations are proposed:

- Economic freedom should be regarded as a determinant for attracting investment.
- Intellectual property is central to the business models of any institution.
- Increased attention and implementation of economic reforms that ensure freedom are necessary.

- Scientific, industrial, technological, and commercial development should be pursued to advance Algerian institutions.

References

Abdel Laoui, S., & Sahraoui, J. D. (2022, September). The role of property rights in enhancing Algerian economic performance: An applied study using the ARDL model during 2009–2021. *Economic Integration Journal*, 10(3), 87–104.

Al-Aybi, M., Keniwa, H., & Doudi, A. (2018, March). Intellectual property and copyright in the information revolution and technological development. *Media and Society Journal*, 2(1), 63.

Al-Jouzi, J., & Qouri, A. (2017). The reality of intellectual property in Algeria. *New Economy Journal*, 1(16), 10.

Ben Halima, L. (2021). The contribution of the World Intellectual Property Organisation in establishing international rules for protecting intellectual property rights. *Legal Studies and Research Journal*, 6(2), 379–396.

Ben Mimoun, I., & Ben Amer, A. K. (2020, April). The impact of some economic freedom indicators on attracting foreign direct investment: A panel ARDL study on selected Arab countries. *Economic Insights Journal*, 6(1), 110.

Haddad, Z. (2016, December). Freedom in the market economy and Algerian legislation. *Humanities Journal*, A(46), 329–338.

Hasaine, S. (2019, December). The concept of economic freedoms in relation to economic indicators and legal entrenchment. *Global Politics Journal*, 3(2), 15.

Kanoury, A., & Shrit, K. (2024). Economic Freedom in Algeria and Its Role in Attracting Foreign Direct Investment. *Economic Studies Journal*, 15(2), 43.

Lakhal, A. (2022). Economic freedom and its impact on economic growth: The Algerian case study. *Contemporary Business and Economic Studies Journal*, 5(1), 333–352.

Maâtatallah, S. (2016/2017). The impact of economic freedom on attracting foreign direct investment in Arab countries: An econometric study (Doctoral dissertation). Faculty of Economic Sciences, Commerce and Management Sciences, University of Abu Bakr Belkaid, Tlemcen.

Ben Zein, M. A. (2008, March 15). Intellectual Property Protection Rules in Light of Legislation and International Agreements. *Rights and Humanities Journal*, 1(1), 90–91.

Tannash, K. A., & Al-Badarin, A. M. (2017). Economic freedom and its impact on the functions of Islamic financial markets: A comparative study. *IUG Journal of Economics and Business*, 25(2), 141–142.

Zidan, M. (2020). *Intellectual property rights* (p. 23). Syrian Virtual University, Syrian Arab Republic.

Zouani, N. (2021). Investment in intellectual property. *Rights and Humanities Journal*, 14(4), 36.