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Isomorphism. A Pathway to Institutionalize Intellectual Property in the Pacific Alliance

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Abstract: The objective of this article is to analyze the process of institutionalization of Intellectual Property (IP) in the Pacific Alliance (PA) from its origin in 2011 to 2020. This organization is made up of four countries: Colombia, Chile, Mexico and Peru. The theoretical foundation is located in the theory of neo-institutionalism, which grounds the analysis of isomorphism and institutional immersion regarding international agreements and political factions within the economic bloc. The question of this work is: What kinds of isomorphism and institutional immersion prevail in the IP documents assumed by the countries of the PA from 2011 to 2020? Two groups of documents were analyzed: the first group is made up of the documents that constitute the regulatory framework of IP in the international context, and the second group is made up of the documents that have been approved by the PA in this field. In the international context, seventeen treaties on intellectual property are analyzed under the scheme of the three types of isomorphism: coercive, mimetic and normative. Since its foundation, the PA has signed 27 documents related to intellectual property, which are distributed in the three types of isomorphism, where eight belong to the mimetic, seven coercive, ten normative and two mimetic and normative. Another concept that is analyzed is that of institutional immersion; under this scheme, seventeen documents signed by the Pacific Alliance are reviewed, where thirteen seek to promote cooperation, and five are mandated. It was found that mimicry maintains a strong influence in international intellectual property agreements; this is the result of institutional weakness; weak institutions seek to imitate the most successful ones, but it is also a consequence of tendencies to promote international cooperation. The continuation of this work should be aimed at explaining the influence of the institutionalization of intellectual property on the innovation indicators of the PA.

Keywords: intellectual property; patents; neo-institutionalism; institutional immersion; Pacific Alliance.

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Introduction

The Pacific Alliance (PA) is a mechanism of integration that emerged in 2011 and is made up of four Latin American countries: Chile, Colombia, Mexico and Peru; together, they represent approximately 36% of the Latin American population. This integration was an initiative of Alan García, president of Peru, back in 2011, the year when this project was launched. The Pacific Alliance's foundation documents mention that they will not only take care of the economic aspects of their relationship, but they will also consider social, cultural and political matters, even though the major emphasis has been given to the topic of free trade among the four countries and the commercial relations with the Asian-Pacific Region (Rodríguez & Vieira, 2015).

Since the 90s, the countries of the PA have made efforts in order to achieve development, but these nations are still stragglers in terms of industrial transformation and the development of their technological capabilities in comparison with other countries who have commercial treaties with them (Ramírez & Isaza, 2019). Currently, the PA has a

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series of mechanisms to promote the science and technology sector, such as collaboration networks for the exchange of knowledge, funds for research, academic mobility, integration of digital and technological markets, events and conferences, and promotion of startup companies. In the specific field of intellectual property, the Pacific Alliance includes: 1) the harmonization of legislation in this field; 2) technical cooperation and training; 3) the fight against piracy and counterfeiting; 4) the promotion of innovation and creativity; and 5) interaction with other international agreements. In Roffe's opinion (2008), after the approval of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), all treaties between countries include intellectual property. The first of them was the one signed between the United States, Canada and Mexico (NAFTA), which began in 1994. However, the agreement that has served as an example, due to the way of integrating intellectual property, is the one signed between the United States and Chile that began on January 1, 2004. Another important example is the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), where Mexico, Chile and Peru are members.

In a treaty where several countries participate, multiple topics are included. Rodrik (2018) points out that four elements must be involved in any free trade agreement or association of countries: 1) clauses regarding the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS); 2) capital management across borders; 3) relations between the State and investors, 4) harmonization of standards. For the objective of this work, what is related to TRIPS is very important; it is an international treaty administered by the World Trade Organization (WTO); it was agreed upon in the Uruguay Round, which began in 1985 and ended in 1994. The first point that Rodrik addresses is considered more broadly and refers to IP, which implies patents, trademarks, copyright, trade secrets, industrial design, and geographical indications.

When attempting a definition of intellectual property, Țîțu, Oprean, Pop and Țîțu (2018, p. 88): "Intellectual property as a whole refers to mind creations such as inventions, literary and artistic works, symbols and images used in commercial activities". In the same direction, Cimoli and Primi (2008, p. 32) point out that: "intellectual property systems encompass the set of rules, regulations, procedures and institutions that regulate the appropriability, transfer, access and right to use knowledge and intangibles". This must be defined in the broader field of intellectual capital and knowledge management.

Although, as Dinu (2022) says, research on intellectual capital was established as a field of study decades ago (Choo & Bontis, 2002), empirical studies of several of its components are very recent, the measurement of the effects of these components on intellectual capital, the mechanisms of governance and above all, the assessment of the transformations that these components introduce in the economy and in the governance of intellectual capital. One of the main components of intellectual capital is IP, which is studied in this work.

IP is an important and strategic factor to effectively direct and coordinate the management of science, technology and innovation (Diaz, Casas, & Giráldez, 2019). In the global context, strengthening IP is a strategy that offers long-term advantages to countries that focus their policies on economic growth and sustainable development (García, 2017). It is a convenient and dynamic factor in the implementation of developmental policies; it implies processes of transformation (Gold, Morin, & Shadeed, 2019; Pérez, Calderón, & Noriega, 2021). Proper IP management requires the design of stable institutional frameworks that promote collaboration (Vargas-Hernández, 2020), investments (Hwang, 2012) and other economic activities to promote innovation (Khorsheed, 2017). Moreover, an effective IP supports global commerce since this is a factor in constant change either regarding local or international matters (Jiang, 2019).

Historical analysis of patent data has emphasized the importance of IP laws in creating incentives for invention, promoting innovation, and driving economic growth. However, this information may not be adequate to predict the levels of invention and innovation

because these laws may be very weak, or the patent registry is imprecise. For the above reasons, it is deduced that it is important for countries to have IP regulations and to keep adequate records of it (Moser, 2013).

Regional trade agreements have increased throughout the present century as mechanisms of cooperation and integration between countries. The World Trade Organization reported the existence of 355 of these agreements in October 2022. In all these agreements, intellectual property is included as an element of high consideration. An example of this is the framework of integration and regional cooperation that exists among the countries of the Pacific Alliance (PA), which outlines clear rules of mutual benefit to stimulate commercial expansion and diversification as an investment. IP is based on the Cartagena Declaration of February 2014 and the Joint Declaration of Industrial Property, signed in Geneva in October 2015. Therefore, the PA is considered a process of interactions among complex economic policies that consider commerce, investment and offshoring of production (Maskus, 2015). This Alliance promotes the implementation of programs that foster the transfer of knowledge and technological developments among the member countries in order to advance towards a regional knowledge-based economy (Arredondo, Vázquez, & de la Garza, 2016; Pérez et al., 2021).

The objective of this article is to review what types of isomorphism and institutional immersion are assumed in the different documents prepared and approved by the member countries of the PA; these documents are related to the IP. The theoretical perspective is approached from neo-institutionalism, particularly isomorphism, with its three aspects: mimetic, coercive and normative. The concept of institutional immersion was also used, supported by two manifestations of cooperation and as a commandment. Methodologically, we used a qualitative approach to analyze documents registered by the World Intellectual Property Organization (WIPO) and the PA. The research question that drives this work is: What kinds of isomorphism and institutional immersion prevail in the IP documents assumed by the countries of the PA from 2011 to 2020?

The content of this work, in addition to this introduction, includes a literature review that explains the importance of IP in countries' economies. The category of isomorphism comprises three types: coercive, mimetic and normative. The concept of institutional immersion is also displayed, and it is both cooperative and mandatory. In the methods and data section, the different documents related to IP in which the countries of the PA participate are analyzed and are located in the different types of isomorphism. The analysis of the information begins with a characterization of the international dynamics of IP and the participation of the countries of the PA; it continues with an interpretation of the current debates about IP in the context of the PA. Finally, the conclusions are presented.

Literature review

One of the weaknesses of Latin American economies is the low production of knowledge and the small percentage of GDP that is dedicated to research and development (I + D). According to data from the World Bank, in 2020, only 0.62% of GDP was allocated to these activities, while the world average was 2.49%. By country, in Latin America, it was Brazil that allocated the most resources, 1.15%; in the countries of the PA, this percentage was lower, Mexico, 0.3%; Colombia, 0.29%; Chile, 0.33%; and Peru, 0.17%. These proportions demonstrate the reduced importance they offer to this sector. Mejía & Araviri (2018) point out that Latin America and the Caribbean contributed only 3.4% of global investment in science and technology, a big difference from the United States of America, which contributed 28.9% and Europe 22.7% in 2013. Using information from the United Nations Educational, Scientific and Cultural Organization, it is found that by 2011, Latin America reached 3.5% of global investment in science and technology, but by 2017, this investment dropped to 3.1%, which means a decline in its global participation (<http://uis.unesco.org>).

To achieve an improvement in the national economy, countries must invest in R&D and strengthen activities related to the production and application of science and technology. Recognize that adequate management of intellectual property is a way to improve productive systems. Intellectual property must create incentives that maximize the difference between the value that is created and the social, economic and administrative costs used to create it. Private producers only have incentives to invest in innovation when they expect returns higher than those invested. The aim is to minimize production costs in the innovation process, as well as in the mechanisms of diffusion (Besen & Raskind, 1991).

The history of intellectual property in Latin America has a long tradition, dating back to the signing of the Paris Convention adopted in 1883, which sought the protection of intellectual creations. Throughout the 20th century, meetings were held in the region with the purpose of establishing laws to regulate intellectual property, beginning with Mexico in 1902, Rio de Janeiro in 1906, Santiago in 1923 and Washington in 1929. It was in the 60s of the twentieth century when meetings to discuss these issues intensified, and a set of agreements emerged, especially from recommendations of the Economic Commission for Latin America (ECLAC) and the meetings of the American States (OAS). In December 2000, the Andean Group signed the Common Industrial Property Regime, which incorporated the rules of the TRIPS. The regime for the Protection of the Rights of Plant Breeders was also signed in 1993 (Mejía & Araviri, 2018).

The integration of IP rights is a factor that could cause significant innovation processes, ease the entrance to new markets, improve prices and promote economic growth within the countries (Hwang, 2012). This variable has been the subject of reforms and globalization policies as an important factor in regulation (Maskus, 2015). Maskus and Reichman (2004) state their concern regarding the public interest in managing policies to privatize technologies, which implies scenarios where IP would set up competition barriers. Property rights must be guaranteed by the government. North (1981) states that one of the basic services that government institutions offer is to establish the economy game rules, mainly three:

1. State the rights and obligations in a national constitution, with two objectives: a) define the rules of competition and cooperation, which frame the structure of the property rights, and b) reduce the costs of transaction to obtain the maximum benefits for society, therefore, to provide certain goods and services with the purpose of reducing such costs.
2. Establish property rights that allow income optimization and define and guarantee the different forms of property.
3. Regulate economic competition in order to create conditions for efficient markets that allow all the agents to obtain benefits naturally (Furubotn & Richter, 2005).

The aspects mentioned above define the IP management mechanisms which are established in the national regulatory frameworks. These mechanisms have the main purpose of promoting the implementation of policies that would bring higher earnings (Lukianenko, Dvornyk, & Kolehko, 2018). Such influence defines the IP regimes, regarding their industrial laws and has an impact on the creation and definition of the commercial agreements subscribed by each nation (Martin, 2021). The institutionalization of an IP legal framework within international agreements is sensitive to negotiation processes for correct adherence (Uranga, Gómez, & de la Mata, 2008).

Nunberg and Green (2004) agree that institutional changes in the technical part of IP systems of developing countries can be relatively easy to achieve, but politically, they could be very difficult to implement. Therefore, understanding the different political realities that work as incentives for the stakeholders is key in the design of a program or a policy (SELA, 2017). Understanding how rooted ways of negotiations and contradictions within the countries are crucial when giving shape to the institutions and organizations; however, these matters are ignored in the studies regarding IP governance (Muzaka, 2013).

Certainly, the role of the World Trade Organization (WTO) through the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) can be defined as an emerging transnational regime of norms and new types of relationships. Through this multilateral organization, global matters are resolved within a regulatory space in ways that continue evolving and expanding as new countries join the WTO, including new areas of attention, services and IP (Wright, 2008). Although multilateral organizations in charge of managing intellectual property work with biased models that usually favor developed countries (Uranga et al., 2008).

Extensive negotiations in terms of political matters and management are necessary to create networks of cooperation toward the implementation of innovation policies which would benefit sustained development within developing countries, (Drahos & Braithwaite, 2002). According to Bird and Stefan (2019), international negotiations required an improvement of the law and regulations within the nations, as well as internationally coordinated legal regulations that promote continuous improvements and balanced development.

Partners that are part of global governance IP agreements create knowledge for all the nations involved, depending on their capabilities and the transfer of technology; those are key elements to create innovation ecosystems (SELA, 2017). Management should be particular for each region according to their culture (Zurbano, Bidaurratzaga, & Martinez, 2014), geographical location (Storper, 2018), and competitive advantage (Heredia, Flores, Geldes, & Heredia, 2017), among other things. However, for May (2004), a global policy is insufficient for this task. States need to reaffirm their sovereignty about matters related to Intellectual Property Rights (IPR) to ensure results from the policies.

Isomorphism and institutional immersion of intellectual property

The analysis of the diverse elements of the IP that need to be legitimated in commercial agreements can be evaluated from the theoretical perspective of neo-institutionalism. Powell and DiMaggio (1999) state that institutions transform and adapt through processes of pressure, and it can take different forms: mimetic, normative and coercive isomorphisms (Table 1).

Table 1. Institutional pressures in the context of the IP

| Types of isomorphism | Definitions |
|-----------------------------|---|
| Coercive isomorphism | Modifications of the intellectual property law due to national and international pressure. Such pressures can be done through coercion, persuasion, invitation and collusion. They also could be direct orders from the government. |
| Mimetic isomorphism | Referents of both national and international industrial regulatory frameworks. This is an imitation process. |
| Normative isomorphism | Professional groups that legitimize the IP law. Organizations are always subjected to norms established by society. |
| Institutional immersion | Network of actors that contribute to IP relation |

Source: own processing based on with information from Powell and DiMaggio (1999, pp. 109-118)

Links between the variables and hypothesis development

DiMaggio and Powell (1983) define these dimensions as follows:

- *Coercive Isomorphism*. These are all the formal acts of pressure that institutions exert over other institutions. Such pressures can be done through coercion, persuasion, invitation and collusion. They also could be direct orders from the government.
- *Mimetic Isomorphism*. This is an imitation process. It is an internal decision to apply certain policies; its implementation seeks to achieve the necessary changes to perform like successful organizations. There are always successful models to imitate in order to improve an institution.

- *Normative Isomorphism.* Organizations are always subjected to norms established by society. These norms can be of different types: for the organization of operative processes, for the organization of workers, environmental regulations, financial regulations, etc.

Each of these types of isomorphism comes from the institutional pillars: regulator, normative and cognitive (Scott, 2003). Coercive pressure seeks to evaluate the impact that laws and orders stated by the government and other multilateral agents have over institutions (Powell & DiMaggio, 1999). Coercion means all the modifications made to the IP laws as a result of national and international pressures (Khoury & Peng, 2011). Pressure from professional normativity is constituted by the contributions made by universities and professional associations or collegiate; such normativity has an impact on organizations (Llamas, 2005; Powell & DiMaggio, 1999). Considering this particular case, professional groups can be considered as the agents that legitimize IP laws in every country. The influence of educational and professional organisms represents social endorsement; their criteria help to evaluate IP policies (Khorsheed, 2017).

On the other hand, mimetic pressure can be understood as a process when some organizations imitate successful models in order to reduce uncertainty. In this particular case, countries that sign a commercial agreement should consider their normativity as a reference to implement their IP laws and take into account the recommendations of multilateral organisms in order to constitute a new regime (Draho & Braithwaite, 2002; Hwang, 2012; Uranga et al., 2008).

Besides the types of isomorphism pressures, there is a fourth dimension known as institutional immersion. According to (Oliver, 1996), institutional immersion happens when economic activity is strategically developed within an institutional context that is integrated by the government, stakeholders, public opinion, and networks of professionals and businesses. Therefore, these networks become part of the IP normativity; they are also acknowledged and legitimated by the national and international communities (Macías & Alonso, 2016).

Institutional strength is important for an organization, and that could be achieved in three ways (Portes, 2012): 1) its trajectory, which means that institutional strength is part of the evolution of the organization; 2) institutionalization is the result of cultures and costumes within the international context, and they are appropriated by the organizations through different forms of diffusion, and 3) the design of internal policies implemented by the organizations themselves.

In September 2015, the 2030 Agenda for Sustainable Development was approved by the United Nations General Assembly, offering a transformative vision through the 17 Sustainable Development Goals (SDG); particularly, objective 16 refers to the promotion of institutions, and it states: "to promote peaceful and inclusive societies, facilitate the access to justice for everybody and create effective, transparent and accountable institutions." In addition, objective 16.8 proposes to strengthen and promote the participation of developing countries with global governing institutions (United Nations, 2018).

This section highlights the importance of achieving institutionalization in the field of intellectual property in a trade agreement. Since the 1990s, most free trade agreements have included a section that deals with intellectual property, the first being the North American Trade Agreement, which began in 1994. Currently, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), signed on March 8, 2018, in Santiago, Chile, is very significant due to the importance it gives to intellectual property. From the above, it is clear that the significance of preparing a study that reports the mechanisms of institutionalization of intellectual property in a trade agreement is understood since, in this way, the position that an agreement provides to the field of knowledge is understood.

Research methodology

This research was carried out using a qualitative approach based on content analysis by employing coding in order to process and characterize the most relevant content of a message. Generally, research based on content analysis is intensive, considering a small amount of complex and detailed information, and it has the presence or absence of a characteristic as a unit of information. Indeed, the constructions of these categorical units are based on some elements of the discourse, the form or the relationships between its constituent elements (Creswell & Creswell, 2018; Merriam & Tisdell, 2016). Under this methodology, two matrices were generated, the first with the seventeen international agreements on intellectual property in which at least one of the countries of the Pacific Alliance participates, including the name of the document, date of issue and revision dates, description of the document and the number of participating countries. The second matrix was integrated with twenty-seven documents from the Pacific Alliance, and the name of the document, date of approval, and three types of isomorphism and institutional immersion are reported.

For this research, 91 documents from 2011 to 2020 were reviewed and retrieved from the Pacific Alliance website. In total, seventeen documents were found with direct and indirect evidence on the subject of IP institutionalization in the Pacific Alliance. The WIPO database was also used to identify international IP treaties involving at least one PA country. The list of these treaties appears in Table 3. Subsequently, the data was examined through the pre-established technique, based on categories that were previously defined considering the perspective of neo-institutionalism. The information was ordered and collated in a comparative matrix using Excel. The isomorphism categories are mimetic, coercive, and normative, in addition to institutional immersion; from this last category, it was possible to identify the role of IP policies in the interaction and cooperation between PA members. The analysis and interpretation of the data were carried out at a regional and international level.

Information analysis

Characterization of the international dynamic of IP among the Pacific Alliance countries

The characteristics of the IP treaties signed by the countries of the PA and their capability to be institutionalized are factors of commercial integration among the parties; they allow agreements to be governed by clear regulations and contribute to the nation's development. Accepting these international measures represents a strength that can be seen in four groups of agreements. Table 3 shows the connections between the international treaties and the categories of isomorphism. The relationship can be direct, indicating that all PA countries are governed by an IP agreement, and indirect, indicating that at least one country is part of an agreement, formally or informally.

The first group of documents (Table 3) shows great participation of the countries since 92% of the members of the United Nations are included in these agreements. The process of adopting any commercial and multilateral agreement led us to consider historical references such as the Paris Agreement; the purpose was to find the similarities in the regulations and reduce the obstacles that affect commercial integration. This indicates that an agreement is a conciliation of norms that becomes a coercive requirement, and it should be accepted by the countries in order to participate in most of the international markets.

IP legal framework is managed and administered by multilateral organizations that execute pressure through three different types of isomorphism. One of WIPO's functions is to manage IP among the country members; they dictate the criteria that should be considered and integrated into the PA countries' legal frameworks. Therefore, to achieve

uniformity, the dissemination of WIPO criteria among the country members through workshops or training activities is recommended.

Table 2. Definitions of international documents and agreements related to intellectual property

| Documents | Relationship with intellectual property |
|--|---|
| Paris Convention for the Protection of Industrial Property | This is one of the oldest international agreements to regulate intellectual property. It was adopted in 1883 and is administered by the World Intellectual Property Organization (WIPO). Currently, it has over 170 country members. |
| The World Intellectual Property Organization (WIPO) | This is a specialized agency of the United Nations dedicated to promoting and protecting intellectual property (IP) rights worldwide. It was established in 1967. |
| World Trade Organization | This is an international organization that regulates and facilitates international trade between nations. It was founded in 1995. |
| Madrid Protocol | This treaty was adopted in 1989 and is an international treaty that facilitates the registration of trademarks in diverse jurisdictions. It is part of the Madrid System. It is integrated by 110 members. |
| Singapore Treaty of Law of Trademarks | Agreement that aims to create a modern and dynamic international framework for the harmonization of administrative trademark registration procedures. It was adopted in 2006 |
| Nice Classification | International Classification of Goods and Services for the Purposes of the Registration of Marks. Classifies goods and services for the registration of trademarks. |
| Nairobi Treaty | It was signed in 1981. This is an international agreement specifically for the protection of the Olympic symbol from unauthorized use. |
| Trademark Law Treaty | An international agreement was designed to streamline and harmonize the procedures for the registration of trademarks. It was adopted in 1984. |
| Vienna Agreement | An international agreement that provides a system for classifying the figurative elements of trademarks. It was adopted in 1973. |
| Lisbon Arrangement | The complete name of this treaty is the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration, and it is an international treaty designed to protect appellations of origin and ensure international recognition. It was signed in 1958. |
| Patent Cooperation Treaty (PCT) | The PCT is an international treaty that simplifies the process of filing patent applications in multiple countries. It was adopted in 1970 |
| Strasbourg Arrangement | The Strasbourg Agreement Concerning the International Patent Classification establishes a common classification system for patents and utility models. |
| Budapest Treaty | The Budapest Treaty on the International Recognition of Deposit of Microorganisms for the Purposes of Patent Procedure. |
| UPOV convention | The UPOV Convention is for the protection of new varieties of plants through intellectual property rights. |
| Act of Hauge Agreement | The Hague Agreement is an international treaty that provides a mechanism for registering industrial designs in a diversity of countries through a single application. |
| Locarno Arrangement | This is an international classification for industrial designs, an international treaty that creates a standardized system for classifying industrial designs. |
| Hauge Agreement | This agreement provides mechanisms for the registration of industrial designs. |

Source: World Intellectual Property Organization (WIPO)

Table 3 offers a brief explanation of the meaning of each of the documents that regulate intellectual property in the international context.

Table 3. Analysis of isomorphism and their relations with the treaties signed within the PA

| General Agreement | Mimetic | Coercive | Normative |
|--|---------|----------|-----------|
| Paris Agreement | ⊖ | | |
| World Intellectual Property Organization | ⊖ | | ⊖ |
| World Trade Organization | ⊖ | ⊖ | ⊖ |
| Particular Agreement | | | |
| Singapore Treaty | ⊕ | | |
| Nice Arrangement | | ⊕ | |
| Nairobi Treaty | ⊖ | ⊖ | |
| Trademark Law Treaty (TLT) | ⊖ | ⊖ | |
| Madrid Protocol | | ⊕ | |
| Vienna Agreement | | ⊕ | ⊕ |
| Lisbon Arrangement | | ⊕ | |
| Patent Cooperation Treaty (PCT) | ⊖ | ⊖ | ⊖ |
| Strasbourg Arrangement | ⊕ | | ⊕ |
| Budapest Treaty | ⊖ | | ⊖ |
| UPOV convention | ⊖ | | |
| Act of Hauge Agreement | ⊕ | ⊕ | |
| Locarno Arrangement | ⊕ | | |
| Hauge Agreement | | ⊕ | |

* Relationship direct (⊖) or indirect (⊕)

Source: own processing with information from the matrix of content analysis of PA

On the other hand, the World Trade Organization (WTO) appears in the three types of isomorphism, but coercive pressure is particularly present. The capability of this entity to impact national economic policies is well known. Consequently, its influence on the PA is considerably active and important. The influence of the TRIPS among the country members strengthens the IP, imposing weight on their political systems. These types of influences can have two kinds of implications for the PA members; they could assume them as an obstacle or as a tool to promote their development through innovation.

The general group stands out for having strong relationships as a result of the level of institutionalization of their IP normative frameworks, individually and at a regional scale. The trademarks group, by its nature, is linked to the *Lisbon Agreement for the Protection of Appellations of Origin and their International Registration* for being the entity that regulates trademarks and intellectual property around the world. This group shows two types of isomorphism: 1) mimetic pressure, which is influenced by the Free Trade Agreements, models of success and growing trademark services; these are mechanisms that influence the Pacific Alliance; 2) coercive pressure, which indicates strength in the protection of trademarks as part of commercial treaties. PA's country members attend the *Nairobi Treaty on the Protection of the Olympic Symbol* in response to the pressure that international agents put to protect their investments, and they also approve norms that suggest actions towards the protection of IP.

Even the actions above, coercive isomorphism that prevails in the PA is a weak mechanism for the IP. The inconsistencies among international agreements and the fact that some treaties have only been signed by Mexico allow just a few tools of linking, which create gaps that affect the coordination of IP policies.

The third group regards patents, and it includes the agreement of the *International Union for the Protection of New Varieties of Plants* (UPOV) by its patenting nature. All the Pacific Alliance's agreements on patents have strong relationships for two reasons: first, because all countries have IP agreements in their normativity and second, because they are part of the isomorphism in its three categories but with an outstanding presence of mimicry since treaties are accepted by different social sectors as models of success that would contribute to strength the innovation systems within the PA.

Lastly, there is the group of agreements regarding Drawings and Industrial Models that are not mimetic nor coercive within the PA, but they are functional for Mexico, for it is the only country signing this type of agreement. Even so, it is important to note that this type of agreement can be considered as a model to follow by the rest of the countries of the PA since they can be helpful in solving problems, they have better capabilities to attend to users and procedures, and they contribute to innovation systems through the use of digital tools. This type of agreement is harder to articulate within the PA, and the adherence and consolidation of a coordinated IP is not easy. Colombia, Chile and Peru must sign documents related to drawings and industrial models assuming two types of isomorphism: mimetic and normative.

Interpretation of the contemporary debates about IP within the context of the PA

In this section, we present the results of our analysis of the trends in the management of IP, which were found in the documents provided on the PA's website. By analyzing the connection between the documents and the categories of isomorphism regarding IP within the PA (Table 4), there is a noticeable predominance of the three categories of isomorphism at different times during the period from 2011 to 2020.

Table 4. Analysis of isomorphism and their relations with the treaties signed within the PA

| Documents | Mimetic | Coercive | Normative |
|---|---------|----------|-----------|
| Declaration of Lima, 28/04/2011 | ⊖ | | |
| Memorandum of Understanding Pacific Cooption Planform, 12/04/11 | ⊖ | | |
| Declaration of Paranal, 06/06/2011 | ⊖ | | |
| Framework Agreement of the Pacific Alliance, 06/06/2012 | | ⊖ | |
| Joint Declaration of the Pacific Alliance Congresses, 06/06/2012 | ⊖ | | |
| Declaration of Cadiz, 11/17/2012 | ⊖ | | ⊖ |
| Declaration of Business Council of Alliance of Pacific, 02/03/2013 | | | ⊖ |
| Declaration of Santiago 01/26/2013 | ⊖ | | ⊖ |
| Mexico Business Guide, 05/01/2014 | ⊖ | | |
| CEAP Veracruz Declaration, 12/08/2014 | | | ⊖ |
| Declaration CEAP of Paracas 07/02/2015 | | | ⊖ |
| Declaration of Paracas, 07/20/15 | | | ⊖ |
| Joint Declaration of the Intellectual Property Offices, 10/08/2015 | ⊖ | | |
| Declaration of Puerto Varas, 07/01/2016 | | ⊖ | |
| Declaration CEAP Puerto Varas, 26/06/2016 | | | ⊖ |
| Second Modifying Protocol of Additional Protocol to the Framework Agreement of Pacific Alliance, 07/01/16 | | ⊖ | |
| Study on trade in Service in the Pacific Alliance, 03/03/2017 | | ⊖ | |
| Pacific Alliance Primer, 05/15/17 | ⊖ | | |
| Cali Declaration, 06/30/2017 | | ⊖ | |
| Pacific Alliance Business Investigation Guide, 03/15/2018. | | | ⊖ |
| Primer for Promotion Consumer Rights in the Pacific Alliance, 05/15/2018 | | | ⊖ |
| Pacific Alliance Version 2030, 06/24/18 | ⊖ | | |
| Declaration of Lima, 06/17/2019 | | ⊖ | |
| Presidential Declaration of the Pacific Alliance on the Multilateral Trading System, 07/06/2019 | | | ⊖ |
| Declaration Business Council of the Pacific Alliance, 11/12/2020 | | | ⊖ |
| Declaration of Santiago, Annex 1, 11/12/2020 | | | ⊖ |
| Declaration of Santiago, Annex 2, 12/11/2020 | | ⊖ | |

Source: own processing with processed information from the Pacific Alliance's website

The meetings and debates that gave origin to the Pacific Alliance happened between 2011 and 2014; by analyzing some discourses of the countries' presidents, the initial vision was to acknowledge mimicry as a form of isomorphism with the purpose of finding the best examples of success in matters of IP. Even though mimicry was not the most important factor throughout the period of analysis, it was relevant in the first four years when the PA was being consolidated. The four presidents and different agents that participated in the integration of the PA proclaimed a clear diagnosis to overcome the commercial barriers that could be obstacles for IP.

We also found coercive characteristics in the documents, with clauses indicating the generation of knowledge as a group in order to achieve good management and historic agreements with multilateral organizations regarding IP that ultimately would influence the commercial dynamic of the PA countries. Precisely when analyzing coercive pressure, it was found that it had a greater influence and impact from 2016 to 2020, a period of time in which presidential mandates established the norms to manage IP among the countries and the requirements that the different agents needed to fulfil in order to adjust them with the agreements signed in the past.

The category of isomorphism with more connections was "normative pressure." This type of pressure was found in twelve documents from the period of 2011 to 2020. Professional associations' role is to create and define the criteria regarding the aspects and concepts that should be covered in a particular field of knowledge. Therefore, the process of commercial integration of the four countries can be found in the three dimensions of isomorphism. Hence, the correspondence of criteria considering the regimes, and the dynamics of the IP vary among the countries, but they should still be coordinated to move forward and materialize the implementation of IP regulations.

In Tables 3 and 4, two types of documents and agreements have been analyzed. Those that appear in Table 3 are of an international nature, to which the different countries must pay attention and assume them; however, in the Pacific Alliance, there are countries that have not attended to them. To strengthen the alliance, the four countries must comply with the different documents and agreements of an international nature. The documents that appear in Table 4 are internal to the AP. A principle of these documents is that they must be aligned with international regulations.

Relationships between intellectual property and institutional policies within the PA: Analytical composition from institutional immersion

The analysis of the documents helped to identify the level of institutional immersion of IP in the PA and to schematize the complexity of two aspects that are part of this matter regarding a network of cooperation and the discussions among the stakeholders when they expressed their requirements for commercial integration (Table 5). As a general characteristic, the institutionalization of IP management is a pertinent policy to achieve the integration of the PA. Cooperation represents strong relationships that have existed since the origin of this organization. The vision of a coordinated IP as a necessary factor to achieve innovation and sustainable development is promoted by the presidents of the PA and the multilateral organizations.

Table 5. The topic of discussions about institutional immersion in PA

| Documents | Mimetic | Coercive |
|--|---------|----------|
| Declaration of Merida | | ⊖ |
| Memorandum of Understanding to Establish a Committee of Service and Investment | | ⊖ |
| Memorandum of Understanding Cooperation Platform Peaceful | | ⊖ |
| Framework Agreement of the Pacific Alliance | | ⊖ |
| Constitution and the Business Council | ⊖ | |
| President Declaration Parliaments Alliance of Peaceful | | ⊖ |
| CEAP Cali Declaration, May 2013 | ⊖ | |

| Documents | Mimetic | Coercive |
|--|---------|----------|
| Cali Declaration, May 23, 2013 | | ⊖ |
| Declaration of Cartagena, February 10, 2014 | ⊖ | |
| CEAP Cartagena Declaration, May 2014 | | ⊖ |
| CEAP Statement | | ⊖ |
| CEAP Paracas Declaration, July 2015 | ⊖ | |
| Declaration Paracas, July 20, 2015 | | ⊖ |
| Joint Statement of the Offices Intellectual Property | | ⊖ |
| Post Declaration Rods, July 1, 2016 | | ⊖ |
| Cali Declaration, June 30, 2017 | ⊖ | ⊖ |
| Joint Declaration Pacific Alliance | | ⊖ |

Source: own processing with processed information from the Pacific Alliance's website

The concept of cooperation in relation to IP was found in seventeen documents from 2011 to 2019; they were found in presidential discourses and statements, either as a petition of inter-institutional or intra-institutional cooperation. As a matter of fact, fifty-two countries observed the development of successful models within the PA, with the intention of becoming part of this regional group or as part of an existent commercial commitment. Furthermore, in most of the documents, cooperation is a factor that would strengthen innovation through some programs, and IP is one of the topics to discuss, even though it is not a matter of higher importance from the perspective of economic policies within the PA.

Meanwhile, stakeholders play an important role in the Entrepreneurial Council of the PA by proposing ideas and recommendations in order to achieve a proper integration of IP within the PA. However, as can be observed in Table 5, the requirements made by the stakeholders are relevant, but the debates that could have led to agreements in the given meetings are very few. Therefore, the outlook is a tendency to the integration of external agents that would intervene in the promotion and management of IP, instead of stakeholders trying to solve the matters of the IP through analytical discussions.

Despite the existence of all these types of agreements between AP countries, it is found that the different dimensions of IP are weak; as shown in Table 6, patent registration by residents of the four PA countries is low. On the other hand, in the production of knowledge, expressed in the publication of scientific articles, with data from Scimago Journal and Country Rank, Mexico appears in 33rd place: Chile, 45; Colombia, 50; and Peru, 60. In the field of innovation, reviewing the 2022 ranking of the Global Innovation Index, Chile appears in 50th place: Mexico, 58; Colombia, 63; and Peru, 65. As the data presented above show, the countries of the Pacific Alliance are not located in a good place in the field of production and application of knowledge. Therefore, it is urgent that these countries promote policies aimed at improving science, technology and innovation.

Table 6. The topic of discussions about institutional immersion in PA*

| | Latin America | | Chile | | Colombia | | Mexico | | Peru | |
|--------------------------------------|---------------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|
| | Residents | Non- Residents | Residents | Non- Residents | Residents | Non- Residents | Residents | Non- Residents | Residents | Non- Residents |
| Patents | 8385 | 42462 | 402 | 2680 | 432 | 1855 | 1117 | 15044 | 125 | 1141 |
| Trademarks | 624356 | 192956 | 46719 | 13214 | 31370 | 18529 | 118329 | 44204 | 26280 | 10970 |
| Industrial design | 7468 | 7404 | 77 | 382 | 365 | 427 | 1050 | 2817 | 93 | 183 |
| Residents/no n-residents (Patents) % | 19.74 | | 15 | | 23 | | 7.4 | | 10.9 | |

Source: own processing with statistics from The World Bank

As can be seen in Table 6, the greatest deficit is found in the field of patents since the difference in registered patents among residents and no residents is wide. Overall, in 2020, 19.74% of registered patents were from residents, 15% in Chile, 23% in Colombia, 7.4% in Mexico and 10.9% in Peru. Here, it should be noted that *residents* refers to patent applications filed by inventors who are citizens or enterprises of the country where the patent application is being submitted whereas *non-residents* is used for patent applications filed by inventors who are not citizen or enterprises of the country where the patent application is being submitted.

One way to improve the indicators expressed in Table 6 is to strengthen the institutionalization of activities related to intellectual property and, in general, innovation. Taking into account the international institutional frameworks and considering their internal capacities, it is necessary to promote policies that lead to the design of institutional mechanisms for the management of inputs for innovation, such as training skills in the population, allocating resources for research and development, risk capital management, achieve alliances between actors and strengthen organizations. All of the above will lead to better products and services, improved processes, quality of employment, and, as a consequence, the achievement of better standards of living for society.

Conclusions

In the documents related to intellectual property that prevail in the Pacific Alliance, the existence of the three types of isomorphism can be observed. First of all, there is the World Trade Organization, where the three types of isomorphism are practised; however, the domain is one of coercive pressure. The group of registered trademarks shows two types of isomorphism, mimetic and coercive, but the second is stronger. A third group includes patents that are related to the three types of isomorphism, such as the Patent Cooperation Treaty, but with a predominance of normative and coercive isomorphism. At a general level, the domain of mimicry is observed; this is the one that can be practised most easily; twelve documents are found in this trend: the coercive is the second, and finally, there is the normative. A total of 27 documents were approved within the PA, in which the normative isomorphism predominates, which has 12 documents, and the mimetic one reaches 10. The mimetic isomorphism documents predominated from 2011 to 2014 since seven of the ten documents were approved in this period of time. After 2016, normative isomorphism was stronger.

The main objective of this work was to discover what type of isomorphism has been followed in the countries of the Pacific Alliance for the institutionalization of intellectual property. It is concluded that from 2011 to 2014, mainly mimetic isomorphism was used; after that date, it was strengthened in normative isomorphism. Regarding institutional immersion, the orientation was towards cooperation.

The contents of the international agreements regarding IP within the PA have the strong characteristic of mimicry, which is also a common condition among the countries that participate in global commerce. Nations accept these treaties because they are mechanisms of international policy that ease the obstacles between the parties to agree on IP, either on a territorial or a regional level. In addition, mimicry can be explained by two factors: the first one is the weaknesses within the PA regarding the lack of agreements on designs and industrial models; in fact, there is only one agreement that has been signed by Mexico regarding such topic, which would obligate the rest of the countries to join the existent agreement; and the second one, emerges from a world trend to patenting, which is being attended by the PA, with factors that ease the integration of networks of cooperation among institutions that manage IP, nationally and internationally. On the other hand, coercive isomorphism is observed in the pressure made by multilateral organizations, bilateral agreements, and community obligations

that somehow direct the management of IP and affect international policies and commercial agreements.

One of the expressions of normative pressure is observed when professional groups that promote IP within the PA have no influence on international regulations and only act as receptors of the criteria they should assume from multilateral organizations. On the contrary, the definition of value criteria in the regional context is weak due to the perception of their politicians, who usually have an epistemic preference toward globalization. Therefore, they acknowledge the power and legitimacy of international institutions to execute commercial agreements that do not necessarily meet the requirements of each country's context. When studying institutional immersion, we observed a strong trend toward cooperation. On this matter, the institutionalization of IP within the PA could be seen as the result of a dialogue regarding technical matters and norms more than from political debates or lobby work done by the stakeholders. Thus, the institutionalization will come from external agents who will influence the promotion and management of industrial property.

The promotion of actions aimed at the institutionalization of IP must be maintained and intensified permanently, both at the level of the countries belonging to the PA and at the general level of the agreement since, since multiple works on the development of the countries show the importance of strengthening a science, technology and innovation sector in improving the levels of development of societies.

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