

**JOURNAL PUBLICATION IN CHILE, COLOMBIA, AND VENEZUELA:
UNIVERSITY RESPONSES TO GLOBAL, REGIONAL, AND NATIONAL PRESSURES
AND TRENDS**

by

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PRESSURES AND TRENDS**

Jorge Enrique Delgado, DDS, M.Ed., PhD

University of Pittsburgh, 2011

BACKGROUND: This project was motivated by the impressive growth that scholarly/scientific journals in Latin America¹ have shown in recent decades. That advance is attributed to global, regional, and national pressures and trends, as well as a response to obstacles that scholars/researchers from the region face to be published in prestigious journals and journals to be included in mainstream indexes. This had not been studied at the institutional level, that is, the universities where most of the journals are published. **PURPOSE:** Analyze policies, arrangements, and actions that Chilean, Colombian, and Venezuelan universities have implemented to support the publication of journals in response to global, regional, and national trends and pressures. **METHODS:** This qualitative study analyzed 24 interviews conducted with journal editors, university authorities, and national experts from 12 universities in Chile, Colombia, and Venezuela. The model of allomorphy developed by Massimiliano Vaira (2004) was used to analyze the findings. **FINDINGS AND CONCLUSIONS:** 1) all universities in the study have developed policies and arrangements to support the publication of journals, including

¹ Latin America and the Caribbean (LA&C), as a geographic region, includes countries in the continental portion and the islands. Reports usually relate LA&C to the Spanish- and Portuguese-speaking nations unless clearly stating that they comprise other countries where those are not the dominant languages, such as Belize, Suriname, Guyana, or Haiti. In the present project, LA&C will be regarded as to the Spanish- and Portuguese-speaking countries.

funding, training, and open access electronic publication. 2) Editors' workload has increased and their job is considered very important; however, it is not recognized in salary systems. 3) Institutional actors participating in the publication of journals are emerging: university journal coordinators, libraries, ICT units, and to a less extent, press units. 4) National factors influencing the publication of journals include political context, university accreditation, journal evaluation systems, ranking and/or funding systems, and university salary systems. 5) Regional directories, repositories, and indexes published in local languages have influenced the growth of journals (Latindex, RedALyC, SciELO, CLACSO, etc.). 6) International organizations, in particular the IADB, have given loans to the countries to develop science and technology. 7) Even though regional initiatives have gained relevance, Thomson Reuters' indexes are still considered reference standards. However, new international actors/initiatives such as Scopus by Elsevier, the Open Journal System by the Public Knowledge Project, and other repositories and directories are becoming alternatives. 8) The imposition of publication models based on natural sciences, pressures to increase exogamy of publications, and languages barriers are still sources of tension.

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LIST OF ACRONYMS/ABBREVIATIONS

AHCI	Thomson Reuters' Arts and Humanities Citation Index
AUSJAL	Asociación de Universidades Confiadas a la Sociedad de Jesús en América Latina [Association of Universities of the Jesus Society in Latin America]
CDCH	Consejo para el Desarrollo Científico y Humanístico, Universidad Central de Venezuela [Council for Scientific and Humanistic Development]
CDCHT	Consejo para el Desarrollo Científico, Humanístico y Tecnológico, Universidad de Los Andes [Council for Scientific, Humanistic, Technological, and Artistic Development] Venezuela
CLACSO	Consejo Latinoamericano de Ciencias Sociales [Latin American Council of Social Sciences]
CLP\$	Chilean peso, currency
Colciencias	Departamento Colombiano para el Desarrollo de la Ciencia y la Tecnología [Colombian department for the development of Science and technology]
CONDES	Consejo para el Desarrollo Científico, Humanístico y Tecnológico, Universidad del Zulia [Council for Scientific, Humanistic, and Technological Development]
CONICYT	Comisión Nacional de Investigación Científica y Tecnológica [National Commission for Scientific and Technologic Research] Chile
COP\$	Colombian peso, currency
ENG	Quotation translation into English
FAPESP	Fundação de Apoio à Pesquisa do Estado de São Paulo [Foundation for the Promotion of Research of Sao Paulo State] Brazil

FONDECYT	Fondo para el Desarrollo Científico y Tecnológico [Fund for the Scientific and Technological Development] Chile
FONACIT	Fondo Nacional de Ciencia, Tecnología e Innovación [National Fund for Science, Technology, and Innovation] Venezuela
HNU	Hemeroteca Nacional Universitaria [National University Library of Periodical Publications] Colombia
IADB	Inter-American Development Bank
ICTs	Information and Communication Technologies
ICFES	Instituto Colombiano para el Fomento de la Educación Superior [Colombian Institute for the Promotion of Higher education]
IMF	International Monetary Fund
ISI	Thomson Reuters Corporation, previously Institute for Scientific Information
LA&C	Latin America and the Caribbean
LiLACS	Literatura Latinoamericana en Ciencias de la Salud [Latin American Literature in Health Sciences] index
LOCTI	Ley Orgánica de Ciencia y Tecnología [Organic Law of Science and Technology] Venezuela
LUZ	Universidad del Zulia, Venezuela
MEN	Ministerio de Educación Nacional [Ministry of Education] Colombia
OA	Open Access
OCyT	Observatorio Colombiano de Ciencia y Tecnología [Colombian Observatory of Science and Technology]
OECD	Organization for Economic Cooperation and Development
OJS	Open Journal System
PAHO	Pan-American Health Organization
PEI	Programa de Estímulo a la Investigación [Research Encouraging Program] Venezuela

PKP	Public Knowledge Project
PPI	Programa de Promoción al Investigador [Researcher Promotion program] Venezuela
R&D	Research and development
S&T	Science and Technology
SCI	Thomson Reuters' Science Citation Index
SINADIB	(FUNDASINADIB) Fundación Sistema Nacional de Documentación e Información Biomédica [National Biomedical Documentation and Information System] Venezuela
SPA	Quotation in Spanish
SSCI	Thomson Reuters' Social Science Citation Index
UACH	Universidad Austral de Chile
UBV	Universidad Bolivariana de Venezuela
UCAB	Universidad Católica Andrés Bello, Venezuela
UCV	Universidad Central de Venezuela
UdeA	Universidad de Antioquia
ULA	Universidad de Los Andes, Venezuela
UNAM	Universidad Nacional Autónoma de México
USAID	United States Agency for International Development
USD\$	United States dollar, currency
VEF\$	Venezuelan bolivar forte, currency
WB	World Bank
WoS	Thomson Reuters' Web of Science

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1.0 INTRODUCTION

1.1 SUMMARY

This is a study about university responses to global, regional, and national trends and pressures regarding the support and development of scholarly/scientific refereed or peer-reviewed journals. The responses, in terms of policies, institutional arrangements, and actions, were proposed to be studied in universities from Chile, Colombia, and Venezuela. This project is motivated by the significant growth that journals in Spanish- and Portuguese-speaking Latin America and the Caribbean (LA&C) have shown in recent decades. That expansion of journals is attributed to a series of pressures, trends, initiatives, and policies at the three levels mentioned, as well as a response to the obstacles that scholars/researchers from the region face to be published by prestigious journals and journals to be included in mainstream bibliographic indexes. The growth has not been studied at the institutional level, that is, the universities where most of the journals are published.

1.2 RESEARCH PROBLEM

In the last two decades, scholarly/scientific journals from LA&C, those that publish research results and scholarly work and evaluate manuscripts through a peer-review process with referees, have experienced an impressive quantitative and qualitative growth (Holdom, 2005; RICYT, 2007, Fischman et al., 2010). This phenomenon is prompted by two global conditions: the development of electronic publication and online repositories² as a result of the advances in information and communication technologies (ICTs), and the open access (OA) movement that promotes free access to knowledge through electronic publication (Alperín & Suhonos, 2007; Alperín et al., 2008; Edgar & Willinsky, 2010; Farga Medin et al., 2006; Fischman et al., 2010; Hedlund et al., 2004; Holdom, 2005; Steenkist, 2008; Willinsky, 2006). At the regional level, journal multiplication has been fostered by the creation of repositories and bibliographic databases and indexes, some of them regional in scope and some having started as local projects and expanded later throughout the region (Aguado López et al., 2008; Cetto et al., 2010; Farga Medin et al., 2006; Landinelli, 2008; Meneghini, 2002; Rodríguez Sánchez et al., 2010; Steenkist, 2008). There are also national factors such as the enactment of higher education and science and technology (S&T) policy (that in some cases include local journal evaluation systems) and the creation or upgrade of S&T agencies (Aguirre-Bastos & Gupta, 2009; Charum, 2004; CNIH et al., 2006; Colciencias, 2006; de Moura Castro et al., 2001; Didriksson, 2008; Gómez, 1999; Rama, 2006; Vessuri et al., 2008; Villanueva et al., 2008), the creation of incentives for publication in indexed journals, and the development of accreditation systems that value institutional publishing capacities (Bernasconi, 2008; Pires et al., 2008).

² Internet warehouses of journals

On the other side, the growth of peer-reviewed journals is a response to the lack of access for LA&C researchers/scholars to the most prestigious publications and for regional publications to the mainstream bibliographic indexes and databases (Aguado López et al., 2008; Borrego & Urbano, 2006; Meneghini, 2002; Torres & Schugurensky, 2002). Reasons for that isolation could be found in the lack of research tradition (Rama, 2006; Didriksson, 2008; Pires et al., 2008; Salmoilovich, 2008), the weakness of existing university press units in LA&C (Rama, 2006; Uribe, 2006), the languages spoken in the region (Spanish- and Portuguese-speaking LA&C) in opposition to the international academic language (English) (Alperín et al., 2008; Borrego & Urbano, 2006; Buela-Casal et al., 2006; Steenkist, 2008; Utges, 2008), and mistrust and undervaluing of LA&C scholars/researchers and journals (Odlyzko, 1998).

An important characteristic of refereed journals from LA&C is that their main publishers are academic units within universities (Bernasconi, 2008; Fischman et al., 2010), unlikely North America and Europe where journals are usually produced in academic associations and/or corporate publishers (Altbach, 2005). Universities are under great pressure to develop their research capacity in order to contribute to the countries' economic development through research and preparing the workforce with the skills and knowledge to compete in the knowledge-based economy (World Bank, 2000; Task Force on Education and Society, 2002; Torres & Schugurensky, 2002; Balán, 2007). In addition, as a possible expression of globalization in education, the American model of research university is spreading out worldwide (Balán, 2007; Bernasconi, 2008).

Given the global, regional and national contexts and pressures as well as the modest development of research and academic publishing in the region, it was considered interesting and relevant to study what kinds of policies, institutional arrangements, and actions (World

Conference on Higher Education, 1998) are taking place within universities to promote the publication of peer-reviewed journals. Usually, research on scholarly/research publication is based on scientometric/bibliometric approaches that include number of publications by an individual, institution, or country, and indicators such as the impact factor. Studies on journals are becoming more frequent given the renewed interest and impulse that academic publication is having in the LA&C region. The most frequent types of publications are journal biographies (Utges, 2008) and there are some comprehensive studies considering the region (Fischman, 2010) or a country (Cerda, 2009). However, there is limited research published on university journal publication, and when it is available, it is not focused on universities, the institutions where most research is generated and published. It was decided to study universities from three LA&C countries where there are national experiences supporting journals but contrasting research and communication traditions, higher education systems, S&T organization, and publication trends.

1.3 PURPOSE OF THE STUDY

This study aimed to describe university responses supporting the publication of scholarly-scientific journals to global, regional, and national trends and pressures, in Chile, Colombia, and Venezuela, in terms of policies, institutional arrangements, and actions.

1.4 RESEARCH QUESTION

The overarching question that will guide this project is,

- What kinds of policies, institutional arrangements, and actions (institutional organization, policy, actors involved, available funding and resources, etc.) are large traditional/prestigious universities from Chile, Colombia and Venezuela developing to promote the publication of scholarly/scientific peer-reviewed journals and how do those arrangements respond to the national, regional and global trends and pressures?

1.5 SIGNIFICANCE OF THE STUDY

LA&C higher education was inspired from the French model of university, whose main purpose was to prepare for the professionals in fields such as medicine, law and priesthood, not necessarily to advance knowledge through research (Bernasconi, 2008). As knowledge-based societies and economies have become more prevalent, LA&C universities face growing pressure to respond to the demands of preparing the manpower with the proper knowledge and skills to contribute to the nations' development (Balán, 2007; Task Force on Higher education and Society, 2000; World Bank, 2002).

One of the most important elements of the research process is its communication. The model of publication of scholarly/research articles in indexed peer-reviewed journals generalized among institutions and most disciplines worldwide to become the main way for written communication (Buela-Casal et al., 2006; Cetto & Alonso, 1999). In general, LA&C contribution to the body of knowledge published in international journals has been modest. This

fact is associated with, among other factors, the obstacles that scholars/researchers and journals from the region face to be accepted by prestigious journals and bibliographic indexes. That is why the growth in quality and quantity of refereed journals from LA&C in recent decades is considered very important (Holdom, 2005; Meneghini, 2002; Utges, 2008).

However, that growth is not following the traditional model mainstream corporate publishing. The claim of this study is that there are global, regional, national and even institutional pressures and trends that influence the publication of journals in LA&C. Most of the research about LA&C journals is usually carried out from the science and technology studies and scientometric/bibliometric perspectives (Borrego & Urbano, 2006; Buena-Casal et al., 2006; Cetto & Alonso, 1999; Gorbea-Portal & Suárez-Balseiro, 2007; RICYT, 2007). Studying them from the point of view of university responses, in terms of policies, institutional arrangements and actions, is new. This study contributes to understand, beyond the issue of journal publication, other aspects of university research and the mission of higher education. Some of those aspects include the evolution and articulation of the higher education and S&T sectors/policy; the value given to knowledge generated locally; the development of international academic networks; the professionalization and role of the university journal editor; the development of university professors as researchers/scholars; and the growth and visibility of LA&C research.

This qualitative study is one of the first steps to study communication of research in LA&C from the point of view of the context of the university institution. It is suggested that a model of peer-reviewed journals publication is emerging from LA&C as an alternative to the for-profit corporate model. Even though it is still early to tell what the contribution of this model will be or how it will evolve, given the dynamic character of society, it is considered interesting and necessary to map what is happening in that region that is making an effort to increase its

participation in the academic and scientific world. However, this study opens the door to further projects about what is happening in the region, using the publication of journals as a pretext and object of study.

Since this project looks at the university policies, institutional arrangements, and actions to promote the publication of scholarly/scientific refereed journals, the focus of the analysis is the universities. The possibility of including institutions from three countries allows studying national patterns and how the national context influences those responses. It was expected that the universities showed some patterns in the way they address the publication of scholarly/scientific refereed journals, depending on the national, regional and global contexts, pressures, and trends and their own institutional features. Among other aspects, the study describes organizational publishing trends, articulation to research and publishing policies, actors involved, funding systems, and issues related to the recognition of scholars in salary or position for publishing in the institutions' journals.

The present study used an analytical framework (allomorphism) to provide the levels of analysis mentioned above (Vaira, 2004). The model identifies global pressures that are inflicted on nation-states and universities, as well as pressures from the nation-state on universities. For this study, it was considered that adding the regional level and a consideration of trends would give more options for analysis. However, in order to adopt a stance of neutrality regarding the phenomenon under study (Patton, 2002), the researcher did not manipulate the data to arrive to a pre-established truth. The levels of analysis were used to facilitate answering the research questions. The investigator was committed to understand the phenomenon as it unfolded and the multiple perspectives that emerged from the data analysis. To assure that neutrality, in a number of times findings from the interviews were contrasted with responses from several interviewees

and complemented with analysis of documents and websites. This was carried out to produce credibility and trustworthiness.

2.0 LITERATURE REVIEW

2.1 SUMMARY

This project is developed within the context of university research and communication of research. Since peer-reviewed journals from LA&C have shown an important growth in the last two decades and most of them are published by academic units within universities, the aim of the study is to describe institutional responses supporting the publication of scholarly-scientific journals to global, regional, and national trends and pressures, in Chilean, Colombian and Venezuelan traditional universities, in terms of policies, institutional arrangements, and actions. Institutional arrangements can be defined as rules, regulations and operational practices within an institution (Schwartzman, n. d.). Data for this qualitative study comes mainly from semi-structured in-depth interviews to university authorities and/or journal editors. For the analysis of the responses to global, regional, and national trends and pressures, an analytical framework called Allomorphism was chosen. Allomorphism looks at unique responses of universities to globalization (Vaira, 2004; Yoder, 2006), and an expanded version of the Glonacal agency heuristic that studies intersecting dimensions and forces shaping higher education: global, national and local (Margison & Rhoades, 2002). After introducing the analytical frameworks and, since the study of refereed or peer-reviewed journals is somehow new to the higher education field in LA&C, the literature review continues with the depiction of the role of

scholarly/scientific peer-reviewed journals in higher education and some of the main initiatives introduced at the regional level. Later on, a description and further comparison of higher education and S&T systems in Chile, Colombia and Venezuela is provided. The review finishes with a description of the universities included in this study.

2.2 ORGANIZATIONAL ALLOMORPHISM

The term Allomorphy is used in chemistry and linguistics. On the word of the Dictionary.com Abridged (n. d.), Allomorphy in chemistry denotes “variability in crystalline form without change in chemical composition.” In linguistics, an allomorph is “any of the variant forms of a morpheme” (Morris, n. d., p. 35), while a morpheme is a “unit of relatively stable meaning that cannot be divided into smaller meaningful parts, as words such as *man* or *most*, or word elements such as *-ly* or *al-* as found in *manly* or *almost*” (Morris, n. d., p. 854). According to Massimiliano Vaira (2004), Allomorphy was first introduced as an analytic framework by Lanzalaco in 1995 to explain how organizations function in different organizational fields and they reflect the institutional structure of each field.

In 2004, Vaira presents the concept of *Organizational Allomorphy* to examine changes in higher education institutions under the pressures of globalization. In this analytical framework, globalization is seen at the cognitive level, that is, the spread of ideas about how universities should be organized and the role of universities have in society, but allows for exploration of how organizations respond to global ideas (Yoder, 2006). The study of global trends in higher education shows an ambiguous impact and diverging interpretations; there are two kinds of theses or theories developed to explain them: convergence and divergence. Convergence theses

see top-down homogenizing processes producing isomorphic changes. Change is seen as linear, deterministic and causal and responses are conciliation, adaptation, translation, and assembly. On the other hand, divergence theories focus on bottom-up complex, multifaceted, heterogeneous and idiosyncratic responses that can be manipulation, interpretation, mediation, resistance, and conflict.

Those theses are seen as mutually exclusive and only show one aspect of reality. As a response, some authors have developed interpretations balancing those two extremes. Kellner (2000) and Robertson (1995) introduce the concept of *glocal* (global + local); Margison and Rhoades (2001) talk about Glonacal agency (global, national, and local agency of collective actors); and Appadurai (1996) calls it *vernacular globalization*. Vaira's (2004) concept of Organizational Allomorphism attempts to explain how organizations adapt or translate institutional patterns and archetypes through complex and multifaceted responses. Higher education institutions are central in the globalizing world facing new tasks and social, political, and economic demands. Drawing from Margison and Rhoades (2001), Vaira adds the role of national political, regulative, and government systems in shaping the structure and organizational features of institutions like universities. There are differences from one nation to another.

Both nation-states and individual institutions are exposed to different types of global pressures. Vaira (2004) identifies two kinds of pressures: institutional and competitive. Institutional pressures are imposed by the *world polity* constitutive structure when new legitimated and legitimating criteria are incorporated. The Dictionary.com Unabridged (n. d.) defines polity as the "form of government or organization of a state, church, society, etc." On the other hand, competitive pressures are inflicted by the *world economy* constitutive structures. Globalization has been related to neoliberalism, which Vaira sees as a political ideology and

project to change the institutional structure of societies. The world polity is constructed at the multi-national level and is represented by multi-national agencies such as UNESCO, the World Bank, the International Monetary Fund (IMF), the Organization for Economic Co-operation and Development (OECD).

The three main global trends that affect individual universities are the imperative to be knowledge producers and deliverers in the context of the knowledge societies; the less regulating or intervening and more mediating role of the government; and the entrepreneurialization and managerialization of institutions (Vaira, 2004; Yoder, 2006).

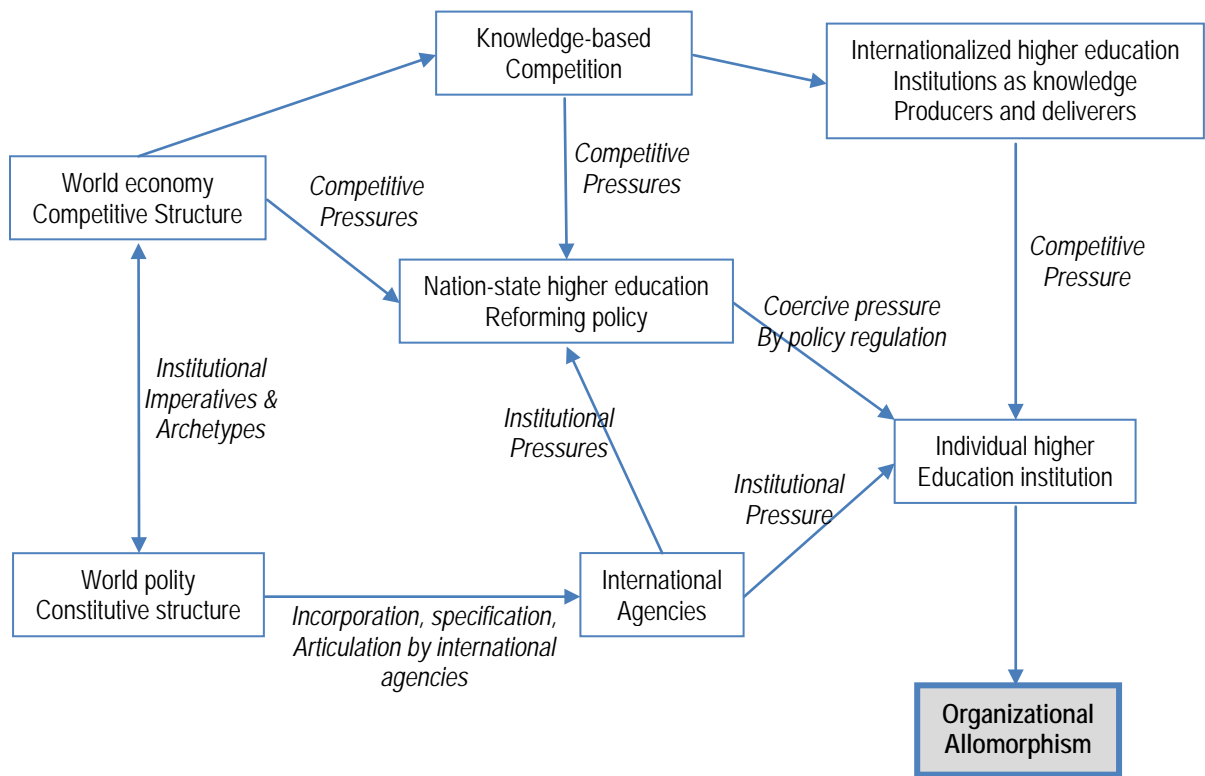


Figure 1. Process of allomorphic change (Vaira, 2004)

Figure 1 is an adaptation of the Vaira’s (2004) diagram on the process of allomorphic change. It summarizes what has been described above. The world polity and economy generate

the global level institutional imperatives and archetypes. The world economy structure inflicts pressures on universities through knowledge-based competition and the production and delivery of knowledge, as well as on nation-states to reform policy. On the other side, the world polity structure influences national policy and individual institutions through multi-national organizations. Nation-states impose pressures on institutions through policy. The responses of individual institutions are the organizational allomorphism.

Analysis through the allomorphism framework involves the global, national, and local (institutional) levels (Vaira, 2004; Yoder, 2006). Previous exploration of the current development of LA&C scholarly/scientific journals by the author of this study suggests that a high number of this kind of publications is originated in universities. That search also conducted to identify several factors that seem to be influencing and influenced by the quantitative and qualitative growth of journals. Those factors can be found at the global, regional, national, and institutional levels; therefore allomorphism could be a useful framework to study the current dynamics of journal publication in LA&C. This study will expand the framework by adding a new level of analysis: LA&C as a region. There are two reasons to introduce the regional level in this study: the existence of regional bibliographic databases/indexes and some shared historic, linguistic, cultural, social, political, and economic background among the Spanish- and Portuguese-speaking LA&C countries. The next section develops the last argument.

2.3 THE LATIN AMERICAN CONTEXT

The idea of “Latin America” is an external construction intended to aggregate the not-Anglophone states and societies in the western hemisphere, with the purpose of generating a

manageable picture of the world and its subdivisions (Whitehead, 2010). The origin of the expression is highly debated. Some attribute it to the Colombian José María Torres Caicedo in 1856, while others argue it was either the French scholar L. M. Tisserand or the Chilean Francisco Bilbao around the same time (Bulmer-Thomas, 2003). Likewise, the appropriateness and comprehensiveness of the term “Latin” is highly controversial. There is also discussion about if LA&C is a homogeneous region or not (Whitehead, 2010), which is somehow similar to that the allomorphism analytical model attempts to address between converging and diverging explanations of globalizing pressures and institutional responses (Vaira, 2004; Yoder, 2006). Authors like Bulmer-Thomas (2003) and Whitehead (2010) argue that regardless the heterogeneity (size, population, ethnicity, natural resources, climate, or level of development of the individual countries), multiple overlapping identities, and even fragmented indigenous legacies, LA&C possesses distinctive features that represent variations of patterns developed elsewhere, critical commonalities, and shared characteristics of social behavior.

LA&C countries share a 500-year Hispanic Catholic tradition (Wiarda & Klein, 2000), as well as the Iberian (Spanish and Portuguese) linguistic practices and cultural traditions, 200 years of constitutional nationalism, and transforming economic of foreign investment, immigration, and technology transfer (Whitehead, 2010). LA&C

Since its integration to the world trading system in the XIX century and during the first three decades of the XX century, LA&C was an export-led region of natural resources. The Depression of 1929 prompted several countries to switch into a model of inward-looking development based on import-substituting industrialization. After the Second World War, the opportunity cost of this model became increasingly high as the world trade started to expand rapidly (Bulmer-Thomas, 2003).

The decade of the 1970s in LA&C was characterized by authoritarianism, repression, and human rights abuses in several countries of the region, and corporatism, dependency theory, and bureaucratic-authoritarianism were usual interpretations given to those situations. 17 out of 20 countries were under dictatorships. The 1980s were a period of poor economic prospects (it is often called the lost decade), debt crisis, and slow and not-smooth transition to democracy in those countries previously dominated by dictatorial regimes (Wiarda & Kline, 2000). The inward-looking phase started to come to an end in this period (Bulmer-Thomas, 2003)). At the beginning of the 1990s, an agreement called the “Washington consensus” promoted by the United States moved the region to democracy, economic liberalization, and free trade with different results. During this 30-year period, LA&C has experienced important transformations such as going from a mostly rural to a mostly urban region, and from mostly illiterate to mostly literate populations (Wiarda & Kline, 2000). However, within the region, there are big differences; some countries have achieved important economic growth and development while others are still poor and underdeveloped (Drake, 2009; Lomborg, 2009; Wiarda & Kline, 2000).

Despite the advance in recent decades, the abundance of natural resources and a favorable ratio of land to labor, no one LA&C country has achieved the status of a developed country (Bulmer-Thomas, 2003). A group of experts gathered in San José Costa Rica in 2007 identified the areas where the main challenges are for LA&C to progress in the pursue of development. The areas include the consolidation of democracy. While Chile is mentioned as an example of democracy comparable to those in Northern countries, Colombia is seen as a partly free country and Venezuela as a country where the concept of democracy is stretched to its limits (Drake, 2009; Lomborg, 2009). A second critical area is access to quality education. The other

challenges are employment and social security, health, environment, fiscal policy, infrastructure, poverty, public administration, and violence and crime (Lomborg, 2009).

2.3.1 Chile

Chile is a democratic republic located in the southwestern part of South America. It has borders with Argentina and Peru and coasts on the Pacific Ocean. It has a total area of 756,102 km² and a temperate climate. Estimated Chilean population in June 2011 is 16,888,700. The predominant religion is Roman Catholic (70%) and the official language is Spanish with some indigenous dialects. (Central Intelligence Agency, 2011a).

Since 1990, when the military regime of General Augusto Pinochet was deposed after a 17-year rule, the country has returned to the democratic structure. Current President, Sebastián Piñera Echenique, is in office since March 11 2010. Since the 1980s, consistent economic policies have contributed to steady growth. Chile is a market oriented economy characterized by a high level of foreign trade. Exports account for one fourth GDP of which one third is exports of commodities. In 2010, Chile was struck by an 8.8 magnitude earthquake that caused damages close to 17% of GDP (Central Intelligence Agency, 2011a).

2.3.2 Colombia

Colombia is democratic republic that is located in the Northern part of South America, with coasts on the Caribbean and Pacific Oceans, and borders with Panama, Venezuela, Brazil, Peru, and Ecuador. It has a total area of 1,138,910 km² and a climate that is tropical along coasts and eastern plains and cooler in highlands. Estimated Colombian population in June 2011 is

44,725,543. The predominant religion is Roman Catholic (90%) and the official language is Spanish with numerous indigenous dialects (Central Intelligence Agency, 2011b). Besides Chile, Colombia is one of the LA&C countries that have implemented neoliberal free market policies.

Colombia has suffered from an armed conflict mainly in the countryside for five decades among drug cartels, insurgents, self-defense groups, and the military. The current president of Colombia since August 7 2010, Juan Manuel Santos Calderón, was Minister of Defense under the previous president, Álvaro Uribe Vélez. Santos received the government with a better but still present security situation. President Santos' economic strategy is based on five pillars: extractive industries, agriculture, infrastructure, housing, and innovation. He introduced unprecedented legislation to better distribute extractive industry royalties and compensate Colombians who lost their lands due to decades of armed conflict and violence. In 2010-2011, Colombia has suffered from a devastating rainy season that caused floods and damages of over US\$6 billion. The country is waiting for US Congressional approval of the US-Colombia Trade Promotion Agreement (Central Intelligence Agency, 2011b).

2.3.3 Venezuela

Venezuela is a democratic republic located in the Northern part of South America, bordering the Atlantic Ocean, between Colombia and Guyana. It has a total area of 912,050 km² and a climate that is tropical, hot, humid and more moderate in highlands. Venezuelan total population of 26,414,816 was estimated in July 2008, of which 31% (male 4,162,862/female 4,034,044) are in the 0-14 years of age range, 63.8% (male 8,299,266/female 8,562,290) between 15 and 64, and 5.1% (male 602,725/female 753,628) are 65 years of age or older. Venezuelan religion affiliations are nominally Roman Catholic 96%, Protestant 2%, and other 2%. The official

language is Spanish (official) with numerous indigenous dialects (Central Intelligence Agency, 2008b).

Venezuela remains highly dependent on oil revenues, which account for roughly 90% of export earnings, more than 50% of the federal budget revenues, and around 30% of GDP. A nationwide strike between December 2002 and February 2003 had far-reaching economic consequences - real GDP declined by around 9% in 2002 and 8% in 2003 - but economic output since then has recovered strongly. Fueled by high oil prices, record government spending helped to boost GDP in 2006 by about 9% and in 2007 by about 8%. This spending, combined with recent minimum wage hikes and improved access to domestic credit, has created a consumption boom but has come at the cost of higher inflation-roughly 20 percent in 2007. Imports also have jumped significantly. Emboldened by his December 2006 reelection, President Hugo Chavez in 2007 nationalized firms in the petroleum, communications, and electricity sectors, which reduced foreign influence in the economy. Although voters in December 2007 rejected Chavez's proposed constitutional changes, Chavez still has significant control of the economy and has indicated he intends to continue to consolidate and centralize authority over the economy by implementing "21st Century Socialism" (Central Intelligence Agency, 2008b).

2.4 HIGHER EDUCATION IN CHILE, COLOMBIA, AND VENEZUELA

LA&C universities were originally created under the French model that emphasized preparing students for key professions and research was not one of the main activities. As a consequence of the university reform movement that started in Cordoba Argentina in 1918 and in following decades, there was a strong reaction against the Catholic Church universities in LA&C, with the

exception of Chile and Colombia, due to the alignment of Catholic Church with elites. Governments advanced a liberal agenda through their educational functions and a particular model of university rose in the region. In recent decades, the LA&C model of university inspired by the Cordoba movement has shown signs of decline. Chile has evolved considerably away from it, while the large national universities in Venezuela maintain their loyalty. On the other side, Colombia never absorbed much of its influence (Bernasconi, 2008).

The three countries, Chile, Colombia and Venezuela experienced dictatorial governments, but the Chilean one had the deepest consequences, while the Colombian dictatorship was short and mild. Universities in Chile hardly had time to recover from the counter-climatic shock of the 1973 coup before they had to quickly become entrepreneurial with the advent of the reform of 1981. That reform served as an indication of the policies that were to prevail in the region in the following decade. During the decades of 1980 and 1990, expansion of LA&C higher education took place by increasing the number of public universities or the multiplication of their enrollments in Venezuela, and through the development of a large private sector in Chile and Colombia. For instance, private enrollment reached 73% in Chile in 2005 (Bernasconi, 2008; Brunner, 2010).

Chile also pioneered public subsidization cuts that reached 40% in the 1980s, and universities were required to make up the difference through tuition fees. The legal and administrative regimes of universities were deregulated so that faculty could be hired and fired according to the rules each university chose to adopt, increasing portions of public funding were allocated competitively, and accreditation began in 1990 (Bernasconi, 2008). Between 1980 and 1990 the public budget for higher education in Chile declined 37.2%, university students grew 125% and faculty declined 4%. Revenue from tuition fees represents 26% in Chilean universities

(Arocena & Sutz, 2000; Arocena & Sutz, 2001). After Chile, Colombia was one of the first countries to enact higher education legislation (Law 30 of 1992). In the Colombian system, students pay a small tuition determined by the household income. Revenue from tuition fees represents 10% in Colombian universities (Arocena & Sutz, 2000). Currently, a new higher education reform is under discussion in Colombia that basically proposes to provide access to private monies for research and other projects. The opposition to this project from the public universities is strong. Public universities in Colombia receive more than 90% of their budgets from the government. In Venezuela the government contribution is almost 100% (Arocena & Sutz, 2001). Tuition is free in public universities in Venezuela. In Chile private and public sectors coexist and tend to converge with the government subsidizing certain private universities, including some Catholic (Brunner, 2010). In Venezuela, even though the private sector is experiencing an important growth, the public sector still prevails with some public universities being more prestigious than the private ones (García Guadilla, 2005).

Arocena & Sutz (2000), Arocena & Sutz (2005), García Guadilla (2005) and Samoilovich (2008) classify higher education systems according to size and massification. Venezuelan higher education is considered a middle-large size system (1,000,000-2,000,000 students) with a medium level of massification (36-45%). The Colombian higher education system is a middle-size system with a medium-low massification (26-35%). Chile has a middle size system (500,000-1,000,000) with a medium massification. Chilean and Colombian systems are mainly private while the Venezuelan one is mostly public. Private enrollment is 50-65% in Chile and Colombia, and 40-50% in Venezuela (Arocena & Sutz, 2000; Brunner, 2010; García Guadilla, 2005). Chile and Colombia have accreditation systems. In Venezuela, universities have strongly opposed being evaluated (García Guadilla, 2005).

Resources for research and graduate training are one of the growing items in public funding in LA&C countries. Salary levels for scientifically productive professors, who benefit from research grants and bonus payments in Chile, enabled full-time dedication to academia (Bernasconi, 2008). In Venezuela, something similar exists with the *Programa de Promoción al Investigador* (PPI) [Researcher Promotion Program]. However, many criticize the lowering of faculty salaries and the need to engage in research to complete income. Colombia has a different system in which faculty productivity becomes cumulative points for status promotion and permanent salary.

Graduate education, including masters and doctoral programs, are the most important levels in terms of research activity. There are large differences between countries in LA&C. Brazil and Mexico concentrate 71% of enrollment. Chile, Colombia and Venezuela, along with Argentina and Peru, contribute only 23% to graduate programs (García Guadilla, 2005). However, during the 1990s Colombia and Chile started increasing their graduate programs and strategic plans in S&T (García Guadilla, 2005); doctoral students five folded in Chile. In the decade from 1996 to 2005, scientific output (mainstream research articles) doubled in Chile. In Chile, the average figure for faculty with doctorates in the five most research-oriented universities is 26%. Venezuela had gains of close to 70% (Bernasconi, 2008). Colombia has lacked behind Chile and Venezuela in the number of doctoral students; however, the government has recently increased funding for scholarships to study doctorates abroad and in the programs that are being created in the country.

Besides the number of faculty with doctoral degrees, dedication is another delicate issue that makes research development difficult in LA&C. Part-time teachers still constitute the

majority of the faculty overall, but academics with more dedication to the university are gaining ground. Fulltime and half-time appointments represent 40% in Chile (Bernasconi, 2008).

2.4.1 Scientific research and higher education in LA&C

According to Brunner (1999), scientific research in LA&C can be described in eight points:

- Academic community in research and development (R&D) is small, science grows slowly in the international arena, and it is concentrated in a few countries
- Graduate education, a possible source for local researchers, grows slowly
- There is a low investment in R&D as a percentage of GDP
- There is an almost exclusive reliance on public funding for research that is starting to become competitive
- There is a separation between the industries and higher education, which is evident with a low private investment in R&D
- Mainstream scientific productivity from LA&C has a modest participation in the global context
- There is a disequilibrium between the imported technology and the one that is locally produced
- Differences within the region are more evident making specialization necessary in order to be competitive.

2.4.2 Higher education in Chile

The first Chilean university, the Universidad Santo Tomás de Aquino, was founded in 1622 by the Dominican priests. Its curriculum was mostly directed at theological studies to prepare the clergy (Arrey-Wastavino, 2001). In 1713, the Santiago city council asked the King of Spain to open a university to train students in law, medicine, and mathematics. The Real Universidad de San Felipe was chartered in 1738 and inaugurated in 1747. The catholic model of higher education continued into the republican period when the Instituto Nacional was established in 1813. In 1842 the Universidad de Chile was established by Andrés Bello with a special emphasis in research. During the Cordoba reform movement in 1918, students actively joined in the fight for control of the Universidad de Chile. For a long time, it had several campuses in different locations and was until 1988 the largest university in Chile (Arrey-Wastavino, 2001; Schiefelbein, 1992). The first private university, the Pontificia Universidad Católica de Chile, was founded in 1888 and, as well as its counterpart, the Universidad de Chile, had several campuses along the Chilean geography (Arrey-Wastavino, 2001).

By 1950, research achieved a higher profile in the country when the government allocated 0.5% GDP for research. The Universidad de Chile in particular benefitted from this (Schiefelbein, 1992). In the 1960s, there was a university expansion and a change in university management, due to the reform that took place in 1965 by the Christian democrat government that gave voice and right to participate in decision making to students and academicians for the first time (Arrey-Wastavino, 2001). The collection, processing, and economic analysis of information helped to coordinate university investment. Expansion was coordinated with selective institutions. In 1967, a global revolution among students hit Chile; students and university staff gained voting power. Enrollment expanded and research centers focusing on

social issues were created. Regardless the increased value given to higher education for national development, the idea of creating a national doctoral program failed. Universities sought to increase their research with expectation of increased funding. A massive expansion of free tuition followed during the 1970-1973 Allende government (Schiefelbein, 1992).

In the early 1970s, around 80% of the existing eight public and private universities were financed with public funds. Universities were governed by rectors and deans' councils, with some public officials in public institutions. The 1973 military coup brought vertical authority and market competition. The emphasis of universities shifted to professional training and funding was linked to competition for enrollment of new students. During the military regime, members of the armed forces were appointed *rectores delegados* (interim presidents), thousands of students and professors were expelled, and many research centers in social sciences were closed. The total education share of government spending declined to 14% from 20% in 1969 (Schiefelbein, 1992).

Until 1980, there were eight universities in Chile, eight private and two public, the Universidad de Chile and the Universidad Técnica del Estado (founded in 1952 and renamed later as Universidad de Santiago). They were known as traditional universities (Arrey-Wastavino, 2001). They are currently known as *universidades del consejo de rectores* (council of rectors' universities).

In 1981, four major reforms to the Chilean higher education system were introduced. Existing traditional universities started to compete with newly created professional institutes and technical centers. Universities were forced to increase tuition fees to find additional financing. As a way to soften the impact on low-income student, loans were made available in traditional universities. A meritocratic system was implemented as half of the public funds were allocated to

traditional universities enrolling students with the highest university entrance examination test scores. 14 campuses of the two public universities were transformed into separate traditional universities. Therefore, in the years 1983-87, a total of 23 universities operated including those that obtained ministerial approval (Schiefelbein, 1992). With the reforms of 1981, regional branches of the universities of Chile and Católica were separated and turned into independent institutions (Arrey-Wastavino, 2001).

With the expansion of course offerings in the already expensive higher education system, there was a consensus that unemployment would increase. In 1987, more emphasis was put on efficiency and the political control on the opening of private universities was halted. Professors were fired and university funds were further reduced and transferred to research. By 1989, 14 new private universities were opened (Arrey-Wastavino, 2001).

Research is shared by universities and public and private research institutes. Even though priority was given to research in the mid-1950s, a strong research tradition was limited to faculties in the main seven universities. The Universidad de Chile started supporting research in the mid-1950s and was quickly followed by other universities. By 1984, there were 160 graduate programs in 11 universities, including 23 doctoral programs. Regardless, the growing efforts to support doctoral training in Chile were not systematic (Arrey-Wastavino, 2001).

Research productivity has gradually augmented in Chile. In 1967, 123 articles in international prestigious journals by an average of 14 authors per million inhabitants were published. In 1980, the number increased to 619 publications by 56 authors. Competition for funds from the national Fund for Scientific and Technological Development (FONDECYT) has stimulated externally-reviewed research projects (Schiefelbein, 1992). In 1999, there were 66 universities in Chile and 200 more had received authorization (Arrey-Wastavino, 2001).

Currently, there is a proposal for new reforms in the higher education sector in Chile. Table 1 provides some indicators of the Chilean universities of this study.

Table 1. General indicators of Chilean universities included in the study

Indicators		Pontificia Universidad Católica de Chile ^a	Universidad de Chile ^d	Universidad de Concepción ^e	Universidad Austral ^g
Enrollment	Undergraduate	19,836	25,181	23,130	11,306
	Masters	2,380	n. d.	n. d.	n. d.
	Doctorate	832	n. d.	n. d.	n. d.
	Medical specializations	n. d.	n. d.	n. d.	n. d.
	Total graduate enrollment	3,212	6,100	1,597	393
	Total enrollment	23,048	31,281	24,727	11,696
Faculty	Full- and half-time	1,471	1,721	1,239 ^f	642
	Part-time	1,360	1,496	n. d.	534
	Total faculty	2,831	3,217	n. d.	1,176
Publications	Articles in ISI journals	1.140	1,363 ^h	627	309 ^h
	ISI journals	9 ^b	3 ^b	5 ^b	3 ^b
	SciELO journals	12 ^c	10 ^c	6 ^c	5 ^c
	Total journals	35	17	6	12
Organization	Cities	Santiago, Villarrica	Santiago	Concepción, Chillán, Los Ángeles	Valdivia, Puerto Montt, Coyhaique
	Campuses	5	5	3	4
Programs	Schools	18	17	19	9
	Undergraduate	87	115	90	44
	Specializations	80	75	31	17
	Master's	84	119	51	21
	Doctorate	30	35	23	8
Research projects	Projects – government fund	n. d.	481	246	28
	Projects – institutional fund	n. d.	87	52	10 ^h
	Total projects	612	677	298	58 ^h

Sources and notes:

^a Pontificia Universidad Católica de Chile (2011).

^b Consorcio para el Acceso a la Información Científica Electrónica (CINCEL) (2010).

^c FAPeSP et al (2011).

^d Universidad de Chile (2011)

^e Universidad de Concepción (2009)

^f Data from July, 2010

^g Universidad Austral de Chile (2010)

^h Universidad Austral de Chile (2009)

Origin of the Chilean universities included in this study:

- The Pontificia Universidad Católica de Chile was founded in 1888 by Monsignor Mariano Casanova, Archbishop of Santiago. In February 11 1930, the University received the title of Pontifical by Pope Pius XI (Pontificia Universidad Católica de Chile, 2011).
- The Universidad de Chile was founded in September 17, 1843 and its first president was the wise Venezuelan Andrés Bello. It started as a center for the development of scientific and humanistic knowledge, but soon assumed the education role left by the Catholic Universidad de San Felipe (1747-1839) y the Instituto Nacional (Universidad de Chile, 2011).
- The Universidad de Concepción was founded in 1919 by the Executive Committee Pro University and Clinical Hospital, whose president, Enrique Molina Garmendia, was its first president (Universidad de Concepción, 2009).
- In 1942, a group led by Eduardo Morales Miranda, created the Society of Art Friends with the idea of promoting the creation of a university in the Chilean southern region. After a planning and documenting process, the University was founded in September 7, 1954 (Supreme Decree 3,757) with donations from individuals and businesses and with Dr. Morales Miranda as its first president. In 1968, Universidad Austral obtained its status of autonomous university (Universidad Austral de Chile, 2011).

2.4.3 Higher education in Colombia

Colombia has a long tradition in higher education. The first universities were Universidad Santo Tomás (1580, recognized in 1622) and Pontificia Universidad Javeriana (1623), which were modeled after the Spanish universities of Salamanca (Santo Tomás) and Alcalá (Javeriana). This tradition has been enriched by the efforts of private institutions, particularly the Roman Catholic

Church. The Colombian higher education system consists of national and regional public universities, religious and secular private universities, and public and private institutes of higher education (Álvarez & Álvarez, 1992).

The Catholic Church has had a tradition of supporting major ideological changes in Colombia. In the 1600s, it introduced positive reasoning in the Botanical Expedition, the most important scientific project of the colonial period, which continued through the early days of the independence period. The relations between the state and the church have been regulated since 1889 through agreements. With some interruptions, the church has continued to administer its own institutions that remain the most prestigious in the country (Álvarez & Álvarez, 1992).

In 1940, there were less than 3,000 students enrolled in universities studying medicine, law and engineering. The main objective of the system was teaching by transmission. However, university programs changed as the national industries grew during the process of modernization (Watras & Cavour, 2001). As well as the rest of Latin America, enrollments expanded in the 1950s. In 1960, only 2% of Colombians aged 20-24 had access to higher education. In the late 1980s, that percentage increased to 15%. Access has continued to augment but the system still serves mostly the elite. With the growth of higher education institutions, there were more than 807,000 enrollments (Álvarez & Álvarez, 1992; Watras & Cavour, 2001).

In 1970, the Colombian Association of Universities (ASCUN) recognized 65 public and private universities, though the National University Fund identified 65 more. In 1986, there were 226 higher education institutions, 70 public and 156 private. By the late 1990s, there were more than 235 institutions of higher education (Watras & Cavour, 2001).

Table 2. General indicators of Colombian universities included in the study

Indicators		Pontificia Universidad Javeriana ^a	Universidad Nacional de Colombia ^e	Universidad de Antioquia ^g	Universidad del Valle ⁱ	
Enrollment	Undergraduate	±24,200	±45,900	34,272	26,321 ^j	
	Master	n. d.	n. d.	n. d.	1,963 ^{j,k}	
	Doctorate	n. d.	n. d.	n. d.	242 ^j	
	Medical specializations	n. d.	n. d.	n. d.	n. d.	
	Total graduate enrollment	>3,460	>7,000	2,237	2,896 ^j	
	Total enrollment	>27,660	>52,900	36,509	29,217	
Faculty	Full- and half-time	n. d.	2,362 ^f	1,915 ^h	783 ^j	
	Part-time	n. d.	699 ^f	5,324 ^h	388 ^j	
	Total faculty	>4,200	3,061	7,239	1,171	
Publications	Articles in ISI journals	n. d.	624 ^f	405 ^h	400.7 ^j	
	Journals in Publindex	A1=2, A2=9, B=7, C=3	A1=8, A2=10, B=7, C=15	A1=3, A2=8, B=5, C=5	A1=1, A2=2, B=4, C=7	
	ISI journals	2 ^b	6 ^b	2 ^b	1 ^b	
	Scopus journals	4	19	5	2	
	SciELO journals	12 ^c	24 ^c	14 ^c	3 ^c	
	RedALyC journals	14	13	7	5	
	Total scientific journals	26	52	29	18	
	Repository/website	Journal list from university press	Journal repository – OJS	Journal list outdated from research	Journal list from publication	
	Organization	Cities	Bogota, Cali ^a	Bogotá, Medellín, Manizales, Palmira, Arauca, Tumaco, Leticia, San Andrés	Urabá, Bajo Cauca, Magdalena Medio, Oriente, Suroeste, Occidente, Amalfi, Segovia, Sonsón, Yarumal, Envigado	Cali, Buga, Caicedonia, Cartago, Norte del Cauca, Pacífico, Palmira, Tuluá, Yumbo, Zarzal
		Campuses	2	8	11	11
Schools		21	20	18	7(22) ^l	
Programs	Undergraduate	51	99	228	158 ^j	
	Specializations	132	124	43	35 ^j	
	Master's	33	133	101	70 ^j	
	Doctorate	8	51	23	11 ^j	
	Total projects	83 ^d	n. d.	17	368 ^{i,m}	

Sources and notes:

^a Pontificia Universidad Javeriana (2011), Pontificia Universidad Javeriana Cali (2011).

^b Colciencias (2010).

^c FAPeSP et al (2011).

^d Pontificia Universidad Javeriana (2011). Projects funded in 2010

^e Universidad Nacional de Colombia (2011). National admissions office

^f Universidad Nacional de Colombia (2011). Vice Rector for Research

^g Universidad de Antioquia (2011).

^h Universidad de Antioquia (2009).

ⁱ Universidad del Valle (2010)

^j Universidad del Valle (2009)

^k This indicator combines enrollment in master's and medical specialization programs

^l Universidad del Valle is divided in 7 *facultades* and within them 22 schools (*escuelas*)

^m New and ongoing projects, 2010

Until 1992, Colombian higher education was regulated by the Decree 80 of 1980 (Álvarez & Álvarez, 1992). In 1991, Colombia approved a new constitution and in 1992 the Law 30 that regulates higher education was enacted (Watras & Cavour, 2001).

Until the 1990s, graduate studies and university research faced some limitations. There were shortages of resources for scientific research including advanced studies and specialization; Connections with scientific institutions in other countries were weak and there was a lack of scientific information; most of the existing links were made with North America and Europe but not with other LA&C countries (Álvarez & Álvarez, 1992). Table 2 shows some indicators of the Colombian universities of this study.

Origin of the Colombian universities included in this study:

- In June 13, 1823, the Assembly and the Archbishop recognized the Pontifical Brief and Royal Decree that authorized the degrees granted by the Jesuit Company School. From its foundation until 1767, when the Jesuits were expelled from the Spanish colonies, institution was called the Universidad y Academia de San Francisco Javier. In 1930, when the Jesuits returned to the country, it reopened as Universidad Javeriana. In 1937, the University received the title of Pontifical (Pontificia Universidad Javeriana, 2011).
- José María Samper introduced a bill to create the Universidad Nacional de los Estados Unidos de Colombia, which was approved as the Law 66 of September 22, 1867 (Universidad Nacional de Colombia, 2011).
- The Universidad de Antioquia was created to provide education to the people of the department of Antioquia who used to have to go to study in Bogota. It was founded as a college-convent in February 9, 1801 after a Royal Decree by King Carlos IV, for the members of the Franciscan community. During the republican period, the University lost its

religious character to become a public departmental institution (Universidad de Antioquia, 2011).

- During the decade of the 1940s, the Department of Valle del Cauca was economically flourishing in that southwestern region in Colombia. The principal of the Instituto Antonio José Camacho, Tulio Ramirez, had the idea to create a university to contribute to that development. Other leaders joined him in the project, and on June 11, 1945 the Department Assembly decreed the creation of the Universidad Industrial del Valle del Cauca (Universidad del Valle, 2005).

2.4.3.1 University accreditation in Colombia

The Colombian Constitution of 1991 determined that education is a human right and a public service, governments are responsible for inspecting and supervising education, and Colombian universities are autonomous. With the new constitutional context it was necessary to update legislation on higher education; thus Law 30 was enacted in 1992. The new Law established the bases for the creation of the National Accreditation System and the National Accreditation Council as its coordinating board. The Colombian higher education accreditation process consists of three components/stages: program/institutional self-evaluation, peer-reviewing, and government recognition through the National Council of Higher Education. Even though higher education in Colombia is traditionally teaching-oriented, the accreditation system, following the model from the United States, expands its mission to teaching, research, and service (Cifuentes & Pérez, 1999).

Important for the present study is to understand how the Colombian university accreditation system relates with the publication of scholarly/scientific journals. Accreditation is given at two levels: programs and institutions. Program accreditation is based on eight factors.

Factor #4 is about academic processes of which characteristic #27 is about commitment with research. This characteristic is measured through the number of publications in indexed and specialized journals, innovations, artistic creations, and patents by the professors of the program (República de Colombia et al., 2006b). On the other side, institutional accreditation considers ten factors including research. Characteristic #15 of research factor is evaluated through evidence of commitment with research. Evidence of this includes types of specialized publications of the institution, their national or international scope, and indexation (República de Colombia, 2006a). Even though accreditation in Colombia is voluntary, it is a factor of competition and prestige.

2.4.4 Higher education in Venezuela

Efforts to provide access to higher education in Venezuela have been continuous since the mid-1950s. The percentage of university educated decision-makers rose from 9% in 1961 to 45% in 1985. Likewise, enrollment passed from 20,000 students in 1960 to 500.000 in 1988. In the late 1980s, the percentage of 20-25-year-old population was 25%, compared to 5.7% in 1965 and 17.7% in 1975 (García-Guadilla, 1992).

The fabric of higher education in Venezuela included in 1990 28 national autonomous universities, 12 national experimental universities, 12 private universities, and 63 non-university institutions (García-Guadilla, 1992).

The national autonomous universities constitute the oldest, most prestigious and largest institutions of higher education in Venezuela. The group includes the Universidad Central de Venezuela (1721), Universidad de Los Andes (ULA) (1810), Universidad del Zulia (LUZ) (1891), and Universidad de Carabobo (1892). Autonomous universities enjoy organizational, academic, administrative, and financial autonomy, and are governed along collegial lines with

distinct hierarchical levels and an academic structure built around faculties (García-Guadilla, 1992).

Experimental universities are institutions created by the state in order to experiment with new academic and administrative approaches in higher education. They enjoy academic autonomy but university authorities are appointed by the ministry or the president (García-Guadilla, 1992).

Higher education is free in the public sector. The state provides around 95% of all financial support and the rest of the revenue comes from graduate and extension courses and enrollment fees (García-Guadilla, 1992). This is a double-edged sword because the better public institutions, where graduate programs and research are usually conducted, depend mostly on the government for funding and are at the mercy of the economy and political fluctuations.

In 1994, higher education accounted for 43.6% of the national educational budget, that is, 15.3% of the national budget. At that time, there were 17 public and 18 private universities. In 1972, there were 89 graduate programs; by 1994, there were 1,047, of which 7% were doctoral, 46% master, and 47% specialization programs. The Universidad Central de Venezuela accounted for 32% of all graduate programs (Jaimes, 2001).

Table 3 shows some indicators of the Colombian universities of this study.

Table 3. General indicators of Venezuelan universities included in the study

Indicators		Universidad Católica Andrés Bello ^a	Universidad Central de Venezuela	Universidad del Zulia	Universidad de Los Andes ⁱ
Enrollment	Undergraduate	n. d.	54,222 ^e	n. d.	47,688
	Specialization	n. d.	n. d.	n. d.	968
	Masters	n. d.	n. d.	n. d.	2,744
	Doctorate	n. d.	n. d.	n. d.	519
	Medical specializations	n. d.	n. d.	n. d.	655
	Total graduate enrollment	n. d.	8,317 ^e	n. d.	4,886
	Total enrollment	14,500 ^b	62,537	61,805 ^h	52,574
Faculty	Full- and half-time	n. d.	n. d.	n. d.	1,790
	Part-time	n. d.	n. d.	n. d.	2,714
	Total faculty	n. d.	4,743 ^e	6430 ^h	4,504
Publications	Articles in ISI journals	n. d.	n. d.	n. d.	790 ^m
	ISI journals	0 ^c	0 ^c	7 ^c	0 ^c
	SciELO journals	0	11	9	2
	Total journals	12	57	36	79
Organization	Cities	Caracas, ciudad Guyana	Caracas, Maracay ^e	Maracaibo, Punto Fijo, Costa Oriental del Lago ^h	Mérida, Táchira, Trujillo
	Campuses	2	17 ^e	3 ^h	3
Programs	Schools	5(17) ^d	11 ^f	11 ^h	11
	Undergraduate	19 ^a	55 ^f	54 ^h	71
	Specializations	31 ^a	159 ^f	67 ⁱ	59
	Master's	22 ^a	106 ^f	67 ⁱ	107
	Doctorate	5 ^a	37 ^f	13 ⁱ	23
	Projects – government fund	n. d.	233 ^g	19 ^j	31
Research projects	Projects – institutional fund	n. d.	712 ^g	475 ^k	1,261
	Total projects	n. d.	945	n. d.	1,292

Sources and notes:

^a Universidad Católica Andrés Bello (n. d. c).

^b AUSJAL (2011).

^c Presidencia AsoVAC (2011).

^d Universidad Católica Andrés Bello is divided in 5 *facultades* and within them 17 schools (*escuelas*)

^e Universidad Central de Venezuela (2008).

^f Universidad Central de Venezuela (2011).

^g Universidad Central de Venezuela, Vicerrectorado Académico (2011). Government funded projects (LOCTI) from 2007, UCV funded projects (CDCH) 2004-2008.

^h Universidad del Zulia (LUZ) (2011b). Data about students and faculty, not disaggregated by level (undergraduate or graduate) or contract (part-time or full-time)

ⁱ Universidad del Zulia (LUZ), & Coordinación Central de Estudios Graduados (2011).

^j Universidad del Zulia (LUZ), & Oficina LOCTI (2011).

^k Vizcaíno Salazar, Gilberto (2010). Active and new projects

^l Universidad de Los Andes (2010a, 2010b).

^m Total number of scientific articles published without detail about type of journal

Origin of the Venezuelan universities included in this study:

- The Universidad Católica Andrés Bello is a Jesuit institution. It was founded as Universidad Católica de Venezuela by decree (1951) of the Venezuelan Catholic Hierarchy in October 24, 1953. In 1954, during the presidency of Carlos Guillermo Plaza, it got its current name (UCAB, n. d. a).
- The history of the Universidad Central de Venezuela goes back to the foundation of the Colegio Santa Rosa de Lima in 1621. In 1721, King Philip V authorized to the seminary to grant titles, and in 1722 Pope gave it the title of pontifical. In 1827, Simón Bolívar and other leaders of the independence rewrote the bylaws of the institution becoming the Universidad Central de Venezuela.
- On May 29 1891, the Venezuelan Congress passed the decree to upgrade the Colegio Federal into the Universidad del Zulia. Since its foundation, the University has experienced ups-and-downs including a close between 1904 and 1946. However, it is considered one of the leading higher institutions in Venezuela (LUZ, 2011a).
- As other universities in Venezuela, the Universidad de Mérida has its origin in a Catholic institution, when Friar Juan Ramos de Lora, bishop of Mérida, founds in 1785 a vocational house to educate priests. Two years later, the house changed its name to Seminario Tridentino. Throughout its history, the University changed names several times and lost its denominational character when President Antonio Guzmán Blanco in 1872 ordered to close all the seminaries. In 1905, the Universidad de Los Andes received its final name (ULA, 2011).

2.5 S&T IN CHILE, COLOMBIA, AND VENEZUELA

2.5.1 S&T system in Chile

The development of the S&T policy and system in Chile during the last two decades can be divided into three periods; 1992-1995, 1995-2000, and present time. During the 1992-1995, S&T was financed through four agencies, the Fondo Nacional para el Desarrollo Científico y Tecnológico (FONDECYT) and the Fondo de Fomento al Desarrollo Científico y Tecnológico (FONDEF) for R&D, and the Fondo de Cooperación Técnica (FONTEC; currently, INNOVA Chile) and the Fondo de Desarrollo e Innovación (FDI) for innovation. They opened the doors to opportunities for companies, universities, and technological centers to engage in innovation. Policy in the 1996-2000 period was oriented towards increasing the participation of private-owned companies, gearing research and development to innovation, strengthening the national technological infrastructure, promoting the training of highly qualified staff, and developing a national information network. This increased international exposure, forced specialization in productive structures, redirected production toward raw materials, resulted in poor investment in R&D. During the last period, the Consejo Nacional de Innovación para la Competitividad (CNIC) was created (2005) emphasizing a long-term competitiveness innovation strategy and its evaluation (Lemarchand, 2010; Villavicencio & Ponce, 2007).

CONICYT was founded in 1967 to promote the regional development of S&T through the creation of specialized research centers. Today its two main goals are to promote the training of human capital and strengthen the country's S&T basis; both are crossed by the areas of scientific information and international cooperation. The programs that exist to strengthen S&T are FONDECYT, Astronomy, FONDAP, Associative Research, Regional Program, and

FONDEF. The programs in the area of human capital are Explora, attraction/insertion of advanced human capital, and training of advanced human capital (Lemarchand, 2010; Villavicencio & Ponce, 2007)

2.5.2 S&T system in Colombia

The articulation of the S&T System in Colombia began with the establishment of the National Science and Technology Council, formed as a consultative and advisory body for the government in 1968, and Colciencias, also in 1968, that was responsible for the promotion and funding of S&T activities, principally in the area of research. From this year some short-lived and uncoordinated attempts were made to develop S&T but without systematic support from the government. However, decades later, the development of critical masses in various production sectors and, above all, academics, led to the issuing of Law 29 in 1990 that led to the systematization of the S&T process (Agapitova et al., 2002; Lemarchand, 2010; Villavicencio & Chiapa, 2007b).

The history of S&T in Colombia can be divided into three periods. In the first period, between 1968 and 1989, the National Council of S&T was created along with several graduate programs; there were Inter-American Development Bank (IADB)-ICFES-Colciencias credits to promote S&T; the International Forum of S&T Policy took place in 1987; and the S&T Mission was created in 1988. The second period occurred between 1990 and 1999, lapse when Law 29 defining the National Policy in S&T was enacted; the S&T System and the Regional Commissions of S&T were institutionalized; Colciencias was part of the National Department of Planning (DNP) (Decree 585); a second loan IADB-Colciencias was granted in 1990; a Law giving Fiscal incentives for S&T activities was enacted in 1992; the Science, Education and

Development Mission was created in 1993; the first National Council for Economic and Social Planning (CONPES) on S&T took place in 1994; a National Commission for Masters and PhDs was created in 1994; a third loan IADB-Colciencias (1994-1998) was granted; the National System of Innovation and the Regional Systems were created in 1995; the Law 344 for the National Learning Service (SENA) to fund Competitiveness and Technological Development Productive programs was enacted in 1996; and the Colombian Observatory for S&T (OCYT) was founded in 1999 (Agapitova et al., 2002; Lemarchand, 2010; Villavicencio & Chiapa, 2007a).

The third period started in 2000 and included the following developments:

- Conpes Document 3080 – S&T Policy 2000-2002
- Creation of the Technological Prospective Programme (2001)
- Expedition Law 643 - Health Research Fund (2001)
- Definition of Regional Agendas for S&T
- Creation of the Platform ScienTI (2002)
- National PhD Programs Support- BIRF Credit (2002-2003)
- Monetary Resources Incorporation in S&T issues- Law 344 in 1996 in the National Plan of Science and Technology Law in 2003
- Calls for sponsorships for the Research Centres of Excellency (2004) in fields like biodiversity and genetic resources; prevalent diseases in tropical areas; modeling and simulation in phenomenon and complex processes; culture, institutions and development management; advanced materials and nanotechnology; biotechnology, agro-alimentary and agro-industry innovation; energetic development, information and communications technologies

- Permanent participation of Colciencias in the Conpes (2004)
- Presence of the Ondas Program for dissemination of S&T among children and youth in all Departments of the country (2005)
- Science, Technology and Innovation National Programs Reform towards knowledge areas (2005): Basic science, health science and technology, mining and energy researches, agriculture science and technology, industrial technology development and quality, marine science and technology, social and human sciences, education research studies, biotechnology, environmental sciences and habitat, electronics, informatics and telecommunications (Lemarchand, 2010; Villavicencio & Chiapa, 2007a)

In summary, the S&T System has implemented mechanisms to develop the system through regionalization and decentralization of S&T policy. There are regional program councils that seek to revitalize the interaction of agents from a level of less aggregation. Nevertheless, this strategy would seem to have been established fairly recently and there are therefore no concrete results in the Colombian regions. On the other hand, if national spending is compared to recommended levels of spending on S&T indicated by the OECD and the Iberic-American States Organization (OEI), according to which a country should invest at least 1% GDP in S&T activities in order to achieve sustainable development, it can be said that spending in Colombia is still very low and although it has increased to its maximum level in the years 2001 and 2002, it has been in decline ever since and has now dropped to levels similar to those of 1998. This drop in investment is almost understandable, at the most aggregated level, if it is taken into account the very low level of human resources production (doctors) to which can be added the lack of an incentive system for scientific research, but above all, articulation with the productive sector.

With respect to this point, there are two lines of reflection. The first is that a vision of a National System of Innovation has found expression in legalization and, for reasons inherent to the concept, it dynamically links the S&T sector to the productive sector. Nevertheless, this vision is an *ex ante* approximation of the need to be and not *ex post* legislation of an incipient system of interaction for although economic agents already exist to form this, such as the SENA, clear and dynamic articulation that can be proven and analyzed to verify its functioning does not exist. The information found reveals a negative tendency with respect to investment in S&T activities by the private sector. Neither did we find the existence of efficient mechanisms to produce incentives in the productive sector to innovate or increase S&T spending. Another central aspect is the brain drain. While not all of these researchers were directly formed by Colombian institutions, highly qualified human resources prefer to take up residence overseas, where it would seem there are better opportunities to conduct research, than living in Colombia where political instability has affected the consolidation of policies for the development of scientific and technological activities and the articulation of a national S&T System (Agapitova et al., 2002; Lemarchand, 2010; Villavicencio & Chiapa, 2007a).

2.5.3 S&T system in Venezuela

The history of S&T in Venezuela can be split up into four stages. The first stage is a process of legitimization that was carried out by a few institutions, of which only the universities stand out, with the setting up of the school of science of the Venezuelan Central University—UCV and the Venezuelan Institute of Scientific research—IVIC. This stage culminated with the consolidation of the first National S&T Plan in 1975. It should be pointed out that this stage also witnessed the creation of the Consejo Nacional de Investigación Científica y Tecnológica (CONICIT) in 1968.

This stage was also characterized by efforts to develop scientific capabilities. The institutions lost momentum in the beginning of the 1980s because the exploitation of oil provided a large proportion of the necessary financing. The oil crisis highlighted the fragility of this first group of scientific institutions that opted for a model of technological supply and had never managed to become part of the national educational system to replenish this first generation of scientists, which at the height of the energy crisis, had reached retirement age (Villavicencio & Chiapa, 2007b).

The second stage began in 1985 with the launching of the second National S&T Plan, highlighting that human resources were to be prepared internally and systematically (the first stage was characterized by preparing human resources externally, for example, by sending students abroad). The third stage included the creation of the PPI, which is the core program of the Venezuelan Foundation for the Promotion of Researchers, whose role is to economically stimulate and coordinate the efforts of researchers in Venezuela on a national level. This stage also witnessed the launching of the third National S&T Plan, based on the incorporation of long-term targets and mechanisms along the following strategic lines: Activation of the S&T system; acquisition of capabilities for using new technologies; orientation of installed scientific and technological capabilities towards solving problems and identifying opportunities; decentralizing S&T management; training and taking full advantage of human resources; S&T information adapted to suit national needs and promoting actions to update and improve its offering; identification of science and technology as essential variables in the new scenario of international relations; ensuring the efficiency of investments in science and technology (Villavicencio & Chiapa, 2007b).

The fourth stage featured the renovation of the CONICIT and led to the creation of the Ministry of Science and Technology as the main executive agency of Science and Technology in Venezuela. In addition, the CONICIT became the Fondo Nacional de Ciencia, Tecnología e Investigación (FONACIT) (Villavicencio & Chiapa, 2007b).

S&T activities in Venezuela are not linked with the productive sector (except for the oil sector). There is an emphasis on the creation of basic science centers and the late appearance of technological development centers. In addition to this, there is a clear reliance on public funds to cover R&D costs; but, above all, there is reliance on research into oil and byproducts. Some scholars in Venezuela point out that one feature of the country's S&T system is the constant designing of new initiatives, but without the corresponding sustained implementation efforts. The National S&T Plan is unclear in the strategic fields relating to the performing of S&T and R&D activities. For example, while the long term strategic lines recognize the emergence of topics such as internal development, sustainability, biodiversity, ICTs, food safety, oil, gas and mining, in practice a great deal of emphasis is being placed on traditional industries with scant added value and limited use of expertise. The general idea is to integrate sectors that are usually excluded from innovative processes, such as working class and indigenous sectors, which is why this National Plan is said to be intended to encompass a full range of actors. However, this rationale is unclear. The S&T Plan includes a section according to which the Ministry of Science and Technology will create regional representation mechanisms to stimulate growth in the states, through state and municipal agencies that prepare projects for the region in question with the support and approval of the Ministry of Science and Technology. Even though it is possible to confirm the formulation of programs promoting the development of technological parks or clusters, there is no way of gauging the impact they have had (Villavicencio & Chiapa, 2007b).

2.6 JOURNAL PUBLICATION

Academic/scholarly journals are commonly called scientific journals, even though the discussion on what makes a publication or a discipline scientific is a matter of controversy. Some prefer to call them peer-reviewed or refereed journals considering the validation process that takes place to decide the publication or not of a manuscript. Although this process is also contested, the latter term seems to be more accepted than the former. For this project, periodical publications that publish scholarly and research work journals will be called interchangeably scholarly/scientific refereed journals or simply journals.

The scholarly/scientific refereed journal is one of the most important platforms to keep up-to-date academic content in constant circulation. Journals fulfill the roles of certification and dissemination of knowledge, and increase researchers' prestige, salary, consultancy offers, and speaker fees. They are also the means of conveying information to broader publics, possibly to secure support or legitimacy for a discipline, or it may be a venue for the communication and evaluation of work among members of a scientific community (Steenkist, 2008). The publication and circulation of academic materials is also an essential tool to sustain university professors' academic level and to guarantee access to knowledge for students and the community in general (Uribe, 2006).

Journals are not the only way of written communication of scholarly work and research but the one that has been imposed. Worldwide, between 1665 (when the first scientific journal was published) and 1960, 50.000 journals that published 500.000 articles every year were created. Scientific societies from industrialized countries created databases to identify the most relevant discoveries and the ways of dissemination with the highest coverage (Consejo Nacional de Indexación y Homologación et al., 2006). The accelerated development of the different areas

of knowledge introduced the need for automatization of bibliographic information originating the first indexation and abstract services. In this context, institutions such as UNESCO, IFLA and ISO became interested in generating bibliographic information systems to provide norms applicable internationally and structure bibliographic records, making possible the exchange of units of cumulative information (Charum et al., 2002).

The exponential growth of scientific literature demands efforts to control quality of the bibliographic information, mainly in developing countries, in order to articulate them to the national and international publishing systems in S&T meeting the demands for certified knowledge. Some of the concerns include certificating national journals according to national regulations, meeting international standards for scientific periodical publication, and being included in bibliographic indexes and databases, which increases their international visibility and enhances space for circulation (Charum et al., 2002; Charum, 2004). However, scholars/researchers and journals from LA&C and other developing regions have faced obstacles being published in mainstream journals the former and included in prestigious indexes the latter.

The most important current trend in the world of scientific publication is that related to the incorporation of ICTs. Diverse models, which are already in place or are under consideration, offer alternatives to the traditional process of academics submitting papers to print journals to which their institutions must then subscribe. These models include publishers producing a subscription-based electronic version of their print journal, e-print repositories, authors posting their articles on their own websites, and peer-reviewed electronic-only journals. Evidently, this debate's momentum is unlikely to be over. Issues of storage and archiving, copyright, authorship, and editorial procedures, for example, need to be considered at length (Holdom, 2005). Other issues that need more analysis include publication in languages other than English,

the little visibility and recognition of authors and publications, and the high costs of publication and delivery (Odlyzko, 1998).

Recently the label “open access” (OA) has been attached to both journals and repositories that offer universal free access to research publications (Alperín & Suhonos, 2007; Alperín et al., 2008; Edgar & Willinsky, 2010; Farga Medin et al., 2006; Fischman et al., 2010; Hedlund et al., 2004; Holdom, 2005; Steenkist, 2008; Willinsky, 2006). Even though the concept is old, the initiative for universal and free-of-charge access to information was created in December 2001 during the Budapest Open Access Initiative. On the other hand and linked to this movement, there is a norm that defines the architecture to create applications: OpenURL (Farga Medin et al., 2006). OA journals offer free electronic access to primary scientific knowledge, not only to the research community within the university but to society as a whole. The user is able to read, print and distribute the publication for non-commercial purposes, without payment (Hedlund et al., 2004).

2.6.1 International initiatives: Public Knowledge Project – Open Journals System

The Public Knowledge Project (PKP) is a project created to improve scholarly and public quality as well as public accessibility to research through software development and research. It operates through the partnership between the universities of British Columbia, Simon Fraser, Stanford, and Arizona State. PKP was founded by John Willinsky in 1998 (PKP, 2011). One of the main PKP products is the Open Journal Systems (OJS) software, a journal management and publishing system (Willinsky, 2005; Willinsky & Mendis, 2007). OJS has had an important impact on journal publication in LA&C. Currently more than 900 journals are published using the system mainly in Brazil (Fischman, 2010).

2.6.2 Regional initiatives

At the regional level, the development of bibliographic databases and OA repositories of full-text journals with quality filters is on its way with initiatives such as the Scientific Electronic Library Online (SciELO) from the Pan-American Health Organization (PAHO) and the Foundation for Research Support in the State of Sao Paulo in Brazil that has established the evaluation criteria for admission and permanence of peer-reviewed electronic journals. Another initiative is the Latíndex database from the Mexican National Autonomous University, whose purpose is to create a directory of the journals that have reached high levels of quality in the LA&C region, Spain and Portugal. A third initiative is the Autonomous University of the State of Mexico RedALyC that publishes, as well as SciELO, journals full text online from all over the region (Cetto & Vessuri, 2005; Charum et al., 2004; Holdom, 2005; Steenkist, 2008). Both SciELO and RedALyC have evolved to become bibliographic indexes to do metadata analysis. A fourth index with a longer tradition is the PAHO's Latin American Health Science Index (LiLACS).

As mentioned above, prestigious international publishers and indexes (Thomson Reuters' SCI, SSCI, and AHCI; Elsevier's Scopus) have been critiqued for biases towards publications from peripheral countries and for not including scientific fields that have a less international character, that is, that seek to solve certain local problems related to health, agriculture, and social sciences and humanities (Charum, 2004). To increase participation and quality, in the late 1980s countries such as Brazil, Mexico, Venezuela and Colombia developed initiatives to promote and evaluate scientific/academic journals (Gómez, 1999). That has resulted in an impressive growing of journals, particularly in electronic format, along with internet connectivity. That poses a real innovation in the dissemination of scholarship (Holdom, 2005).

The following titles describe the main regional and international initiatives that have contributed to the development of scholarly/scientific refereed journals from LA&C.

2.6.2.1 Regional Online Information System of Scientific Journals from Latin America, the Caribbean, Spain, and Portugal (Latindex)

The Latindex project (<http://www.latindex.org>) is an automated scientific periodical information system for LA&C, Portugal and Spain run by the Universidad Nacional Autónoma de México (UNAM). The system was created in 1995 to disseminate, provide access, and raise the quality of the journals published in the region. Latindex is the outcome of the collaboration among a network of regional clearing houses which operate in a coordinated manner with shared resources (Cetto et al., 2010; Steenkist, 2008). It seeks to:

- Pool efforts in the participating regions and countries regarding production, dissemination, systematization, and use of scientific information
- Reinforce and upgrade scientific publishing in the LA&C region
- Increase the international visibility and coverage of such publications
- Use the information processed as a basis for byproducts
- Influence national and international circles in regard to scientific information, documentation and publication (Cetto & Vessuri, 2005; Cetto et al., 2010).

Latindex established a set of 33 criteria to evaluate editorial quality, which is done to the last three published issues of a journal. Latindex has two databases, a directory that includes an inventory of journals that meet basic characteristics such as ISSN, publisher, address and editor. The second product is the catalogue. To be included in the catalogue, periodicals should comply

with the 8 basic characteristics and at least 17 of the other criteria. Many of these criteria are already part of evaluative models such as São Paulo (Brazil) and Colciencias (Colombia) (Borrego & Urbano, 2006). Tables 4-7 show the Latindex criteria according to basic characteristics, presentation, management and editorial policy, and content.

Table 4. Latindex evaluation criteria. Basic characteristics of print journals

1	Mention of the editorial board
2	At least 40% of the manuscripts published are: a) non-published original articles; b) technical reports, norms, or specifications; c) conference papers; d) letters to the editor or short communications; e) literature reviews, states of the art, etc.
3	At least 1 year being published or the most recent three issues if the journal is published every six months or annually
4	Full identification of authors (individuals or institutions)
5	Place of publication
6	Mention of the publisher
7	Mention of the director or editor
8	Journal address

Table 5. Latindex evaluation criteria. Characteristics of presentation of the journal

9	Pages of presentation including name of the journal, ISSN, volume, number, date, and bibliographic heading
10	Periodicity or number of annual issues
11	Table of content including title, author(s) and initial page
12	Bibliographic heading at the beginning of each article, identifying the source
13	Bibliographic heading in each page
14	Mention of the members of the editorial board
15	Institutional affiliation of the editorial board members
16	Institutional affiliation of the authors at the beginning and the end of each article
17	Dates of reception and acceptance of the articles

Table 6. Latindex evaluation criteria. Management and editorial policy

18	ISSN
19	Journal definitions: objective, thematic and/or target readers
20	Description of the peer-review system
21	Referees external to the publishing institution
22	At least 50% articles are from authors external to the publishing institution. In the case on journals of associations, this counts for the members of the editorial board
23	At least two thirds of the editorial board must be external to the publishing institution
24	Services of indexation and abstract, directories, and/or databases
25	The journal complies with the declared periodicity

Table 7. Latindex evaluation criteria. Content

26	At least 40% articles are research reports, scholarly communications, or original creations
27	Instructions to authors about manuscript submission and abstract
28	Instructions about reference writing
29	Mention of originality requirement
30	Abstract
31	Abstract in two languages
32	Keywords
33	Key words in two languages

The Latindex directory contains basic information of more than 19,500 scientific or academic journals, and the catalogue has more than 5,000. Latindex functions on the basis of regional collaboration with country members through a responsible institution or agency. Present members of the system are institutions in Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Mexico, Nicaragua, Peru, Portugal, Puerto Rico, Spain, Uruguay and Venezuela (Cetto & Vessuri, 2005; Vessuri et al., 2008). Venezuela joined Latindex in 1997 and is represented by the Ministry of the Popular Power for Science and Technology; at the beginning, the representative was the Venezuelan Institute for Scientific Research. Chile joined in 1998 and is represented by the Comisión Nacional de Investigación Científica y Tecnológica (CONICYT). Colombia joined in 1999 and is represented by the Departamento Colombiano para el Desarrollo de la Ciencia y la Tecnología (Colciencias) (Latindex, 2011).

2.6.2.2 Scientific Electronic Library Online (SCIELO)

SciELO (<http://www.scielo.org/>) started as an electronic library in 1997 publishing digital versions of a selected collection of Brazilian scientific journals. Soon it expanded to all LA&C and today it is the biggest OA platform published in the region. It hosts OA journals of a wide array of disciplines but has an emphasis in the social sciences and health disciplines. The SciELO project is an initiative of the Sao Paulo State Foundation for the Support of Research

(Fundação de Amparo à Pesquisa do Estado de São Paulo—FAPESP) and the Centre of Information about Health Sciences for Latin America and the Caribbean (BIREME). In addition to twelve LA&C countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, México, Peru, Uruguay, and Venezuela) Spain and Portugal have joined the initiative. Since 2002, the Project is also supported by the Brazilian Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). Each country joining the SciELO initiative has Brazilian-based technical support (the maintenance and actualization of programs that make the sites possible, among other aspects, are done by the main platform). However, no SciELO subdivision gets any monetary help from the Brazilian base. Adding the national repositories, the total of the SciELO platform hosts more than 800 scientific journals. Every single one of them has the approbation of the highest scientific entity of each nation. This approbation guarantees the quality of every article (Meneghini, 2002; Steenkist, 2008).

2.6.2.3 Red de Revistas de América Latina y el Caribe (RedALyC)

The first important initiative to build a digital platform for higher education among Mexican universities was brought by the University Corporation for the Development of the Internet (<http://www.cudi.edu.mx/>). Soon the thirteen member institutions decided to create an open web of digital libraries where all the activities of intra-institutional research would be available for everyone. It would be known, in Spanish, as Red Abierta de Bibliotecas Digitales (RABiD). Thereafter, many publishing schools joined the initiative to spread the academic publishing activity that is produced in and about LA&C.

With the motto “Science that is not seen does not exist,” the RedALyC project started officially in the year 2002. In its first stages it published only journals related to social sciences and humanities. Seeing the great success and rapid growth, by 2006, RedALyC received the first

journals on natural and hard sciences. The project was well received and it continued to expand. By June 2007, RedALyC stored 374 specialized journals (291 dedicated to the social sciences and the humanities and 91 to natural sciences) and almost 60,000 articles of all kinds of disciplines. In 2011, it already hosts more than 750 journals and almost 190,000 articles (Aguado et al., 2008; Steenkist, 2008).

In the last two years, RedALyC has evolved to include sections by thematic fields, countries, other organizations such as the Consejo Latinoamericano de Ciencias Sociales (CLACSO), and a scientometric atlas using the methodology of the SCImago group (Aguado, 2010).

2.6.2.4 Consejo Latinoamericano de Ciencias Sociales (CLACSO)

CLACSO is a non-governmental organization whose objective is to promote research and teaching in social sciences. Members of CLACSO include 293 research centers and more than 500 graduate programs from Latin America, the Caribbean, North America, and Europe. One of the most important projects of CLACSO is the network of digital libraries. It includes a portal of 97 OA journals in social sciences, access to online versions of books published by CLACSO, and several documents about online publication (CLACSO, 2010). Recently, the CLACSO collection was included in the portal of RedALyC.

2.6.3 Scientific publication in Chile, Colombia, and Venezuela

In the 1990s Chile, Colombia and Venezuela started strategic planning projects to develop S&T (García Guadilla, 2005). There are a few financial incentive systems in LA&C. Chile and Venezuela have programs to support productivity of research publications, inventions and

innovations. Institutions that support research and provide scholarships for graduate programs are important in Colombia (Colciencias) and Venezuela (FONACIT). Chile's CONICYT provides funding for projects that include publication of journals (García Guadilla, 2005). Regarding the evaluation and funding of journals, FONACIT does both, Colciencias has a journal evaluation system (Publindex), and CONICYT provides funding for journals when they are part of development projects. The latter agency uses the SciELO journal list as the official one, while Colombia and Venezuela have their own databases and repositories, besides SciELO and other providers.

2.6.3.1 Scientific publication in Chile

In Chile, the program of scientific information of CONICYT has worked on assuring the access to national and international information in order to support research, education, innovation, and decision-making. With that purpose, two initiatives have been implemented; one is the access to full-text bibliographic databases (BIEC) and the other the maintenance of the national collection of electronic scientific journals. The former provides access to more than 5,000 journals and resources to measure productivity through the Web of Science (WoS). The latter focuses on the SciELO Chile collection that already has 85 full-text journals. The program also has since 1988 an annual competitive fund for the publication of scholarly/scientific journals for high-quality journals that circulate internationally (CONICYT, 2011).

2.6.3.2 Scientific publication in Colombia

The first electronic publications in Colombia emerged at the early 1990s. The publication of electronic journals was one of the first projects of the newly-born and growing Colombian platform in the Internet. The Hemeroteca Nacional Universitaria (HNU) published in 1994 the

first issue of *Revista Colombiana de Matemáticas*. A few days after its release, the journal was announced by the best Math sites in the Internet: the American Mathematical Society, the webmaster of Penn State University, and the European Mathematical Information Services (EMIS) (Charum et al., 2002). In the early 1990s, the Colombian government enacted the Decree 1444 linking the salary increase of professors from public universities to their academic productivity. This led the institutions to create evaluation systems of that productivity (Charum, 2004). In response to the myriad of interpretations and systems developed, in 2002, the Decree 2912 replaced the Decree 1444 establishing explicit products such as publication in specialized national and international journals, determining kinds of documents, and classifying the journals according to categories established by Colciencias. In 2002, Colombia had 278 periodicals in the directory of Latindex and 53 in the catalogue (Charum et al., 2002).

The creation of the National Bibliographic Index—IBN Publindex allowed the Permanent Service of Indexation to classify in predetermined dates the scientific and technological journals based of criteria of quality. There are four categories of indexation, A₁, A₂, B and C and are assigned with a validity of two years so editors must submit the information of new numbers frequently. Editors have submitted their publications responding to formal callings of invitations from Colciencias and the Colombian Institute for the Promotion of Higher Education—ICFES. Information of journals is entered regularly in the database, so that each publication can build its own history within the National System Colombian ST&I Publications (Colciencias et al., 2006).

At the beginning, Publindex was a bibliographic directory but evolved into a bibliographic database with scientific committee (BDSC), a type of IAS that analyzes the characteristics of the publications and evaluate their quality (Gómez, 1999; Consejo Nacional de

Indexación y Homologación et al., 2006). The following are the main events in the development of Publindex:

- 1996, the calling included a form to gather information about the publications, establishing indicators and classification. This calling was also useful to assign resources to publications.
- 1998, the form was change to floppy diskettes in Excel. This time there was the first selection of journals. Journals were classified as A, B y C.
- 2000, the new form in MS Access became available online. It was the first time that there was a journal database. Evaluation included visual inspection of individual issues/numbers of each journal, classification of the types of articles published, and classification assigned by a committee. Publindex was at this point considered as an index though it really was a bibliographic database.
- Challenges for the following versions of Publindex: controlling the periodicity for information recollection (it is currently twice a year), transcending the journal, issue, and summary levels of analysis to include full documents, and making information public giving it more visibility.
- In 2002, categories were adjusted to be A₁, A₂, B and C.
- 2003, the calling for journals became permanent (Charum, 2004; Colciencias, 2006).

Regarding the participation of Colombia in SciELO, the national platform maintains the site without getting any extra fees for this activity. The coordinator of SciELO Colombia is Edgar Prieto, professor of new technologies at the Universidad Nacional in Bogotá. SciELO Colombia is managed by a National Consultative Committee consisting of Colciencias, the

PAHO, the Public Health Institute of the Universidad Nacional, and the editor's representatives (Steenkist 2008).

2.6.3.3 Scientific publication in Venezuela

In Venezuela, the National System for Biomedical Information and Documentation (SINADIB), the Ministry of Science and Technology, the National Fund of Technology and Innovation and the National Centre for Information Technologies are in charge of developing the SciELO project. It counts with the support of the Faculty of Medicine of the Universidad Central de Venezuela. The Venezuelan SciELO collection includes only those journals included in the National Register of Periodical Publications and have been evaluated over five different characteristics by the National Fund of Technology and Innovation (FONACIT) (Steenkist, 2008).

3.0 RESEARCH DESIGN

3.1 RESEARCH METHODOLOGY AND METHOD

This study looks at the institutional policies, arrangements, and actions taking place in large prestigious universities from Chile, Colombia, and Venezuela to promote the publication of refereed journals. Most studies use scientometric/bibliometric approaches to study journals and scholars/researchers' productivity but a few look at what happens within the institutions where those journals are published, which are determined by national conditions and influenced by the regional and global contexts. Therefore, the study analyzes associated factors, events, and decisions made at the institutional, national, regional, and global levels. Most of the data comes from semi-structured interviews conducted with key informants representing the universities included in the study and experts in the subject in each country. The approach is qualitative and combines data from the interviews and reviews of documents and websites from the universities and agencies/organizations related to the topic under study.

Within a social constructionism epistemological standpoint (Crotty, 2003; Paul, 2005), the methodological approach of the study is qualitative, the main method is interview and the data collection instrument is semi-structured in-depth interview (Neuman, 2006).

3.2 SAMPLE AND SAMPLING METHOD

Data for this study comes mostly from transcriptions and qualitative analysis of semi-structured in-depth interviews conducted with experts from Chile, Colombia, and Venezuela and key informants from universities in the same countries. They were chosen from a pool of 136 interviews carried out in the field between 2008 and 2010 (Table 8). The interviewees were chosen through different sampling methods. The main method was snowball sampling (Trochim, 2006), according to which a first key informant suggested another key informant and so on, creating a chain of related subjects. The initial sources of information were the master journal lists in each country (National Commission for Scientific and Technological Research – CONICYT in Chile,³ the National Bibliographic Database/Index – Publindex in Colombia,⁴ and the National Fund for Science, Research and Technology – FONACIT in Venezuela⁵), key informants from a national agency (CONICYT in Chile) and an international organization (UNESCO IESALC in Venezuela), and personal contacts of the researcher in the three countries.

Table 8. Countries and cities where the interviews were conducted

Country	Cities	Number of interviews
Chile	Concepcion, Santiago, Temuco, Valdivia, Valparaiso	38
Colombia	Barranquilla, Bogota, Cartagena, Cali, Medellin	63
Venezuela	Caracas, Maracaibo, Merida	35
TOTAL		136

The study uses *institutions* as unit of analysis, mostly at the regional and global levels. In this case, institutions are traditional prestigious universities. When the analysis is carried out at

³ http://www.scielo.cl/scielo.php?script=sci_alphabetic&lng=es&nrm=iso

⁴ <http://201.234.78.173:8084/publindex/>

⁵ <http://www.fonacit.gob.ve/publicaciones/indice.asp>

the national level the units of analysis are Chilean, Colombian, and Venezuelan universities. Four universities from each country were selected to be part of the study.

Table 9. Number of interviews included in the study by country, informant/institution, city/campus, and ownership

Country	Informant or Institution-City	Number of interviews	City/campus	Ownership
Chile (n=9) Year 2010	Expert/national authority	2	-	-
	Pontificia Universidad Católica	2	Santiago	Private
	Universidad de Chile	1	Santiago	Public
	Universidad Austral	2	Valdivia	Public
	Universidad de Concepción	2	Concepción	Public
Colombia (n=7) Year 2009	Expert/national authority	1	-	-
	Pontificia Universidad Javeriana	1	Bogotá	Private
	Universidad Nacional de Colombia	2	Bogotá	Public
	Universidad de Antioquia	1	Medellín	Public
	Universidad del Valle	2	Cali	Public
Venezuela (n=9) Year 2009	Expert/national authority	1	-	-
	Universidad Católica Andrés Bello	1	Caracas	Private
	Universidad Central de Venezuela	2	Caracas	Public
	Universidad del Zulia	2	Maracaibo	Public
	Universidad de Los Andes	2	Mérida	Public
TOTAL		24		

The sample consists of 25 interviews that provide the core data for the study (Table 9). Four interviews come from national experts where at least one interview is from each country. The other interviews represent university authorities/journal editors from three public research universities and one private non-profit Catholic university in each country. Catholic universities have played an important role in LA&C (Bernasconi, 2008). The interviews represent 12 universities located in nine cities in Chile, Colombia and Venezuela (Table 9). The reason to choose three public and one private university in each country is that in LA&C most research is carried out in public universities and only a few private universities make a relevant contribution

to research (Arocena & Sutz, 2005). They are among the institutions with the largest number of journals in the national journal list: SciELO Chile (data from 2011), Publindex in Colombia (data from 2010), and FONACIT in Venezuela (data from 2009).

The interviews from Chile included in this study corresponded to a national expert in higher education, a national expert in communication of research, six journal editors, a school director of research and publications, a university journal coordinator, and a library director. In some cases, an interviewee could have more than one role. Chilean universities where interviews were carried out but not included in this study are Universidad UCINF, Universidad Autónoma de Chile, Universidad Finis Terrae, Universidad Andrés Bello, Universidad Católica Silva Henríquez, Universidad Central, and Universidad Católica de Valparaíso.

The interviews from Colombia included in this study corresponded to a national expert in sociology of science, three journal editors, an assistant editor, two university journal coordinators, a vice dean for research, a SciELO employee. As well as in Chile, in some cases, an interviewee could have more than one role. Colombian universities where interviews were carried out but not included in this study are Universidad de Medellín, Universidad CES, Universidad EAFIT, Universidad de los Andes, Universidad del Rosario, Universidad de La Sabana, Universidad El Bosque, Universidad Santo Tomás, Instituto Tecnar, Universidad de Cartagena, Universidad del Norte, and Universidad ICESI.

The interviews from Venezuela included in this study corresponded to a national expert in science and technology studies, four journal editors, two university journal coordinators, two research council directors, and a coordinator of publications. As well as in Chile and Colombia, in some cases, an interviewee could have more than one role. Venezuelan universities where interviews were carried out but not included in this study are Universidad Pedagógica El

Libertador, Universidad Experimental Simon Rodriguez, Universidad Simón Bolívar, Universidad Nacional a Distancia, Instituto Pedagógico Caracas, and Universidad Metropolitana.

The decision to focus on large traditional/prestigious universities is also validated by one of the experts interviewed, “Here in Chile, like in the rest of Latin America, research is highly concentrated in a small number of universities. Those are national and traditional universities that have received over time greater government support.”

3.3 PROCEDURES AND DATA COLLECTION

This study has the antecedent of an exploratory field project carried out in Colombia in 2008 to study journal publication status. One of the main findings of that study was the increasing institutional involvement of universities in the publication of journals. Therefore more attention was paid to institutions and publishers in subsequent field trips. Data for this study comes mostly from interviews conducted during field research trips to Chile, Colombia, and Venezuela between 2009 and 2010. Both projects obtained Institutional Review Board (IRB) approval (Table 10). In this case, it was not necessary to obtain a new IRB approval because data already exists.

Table 10. Field research projects from where data will be chosen for the study

ID	Title	State	Last change	state	Review Type	PI
PRO10040119	Scholarly journals in Latin America-Chile, Argentina, Uruguay, Paraguay	Exempt Approved	6/4/2010 8:52 AM		Exempt	Delgado
PRO09020267	Initiatives and Experiences Developing Scholarly Journals in Latin America [Brazil, Mexico, Venezuela, Colombia]	Exempt Approved	3/11/2009 8:33 AM		Exempt	Delgado

Interviewees were contacted via email or phone and asked for 45-60 minute audio-taped interviews. Different sets of questions were asked in the interviews depending on kind of informant, which could be a journal editor, a university authority, or a national expert in S&T and higher education.

The four general/broad questions asked to journal editors were:

- 1) Purpose, history and organization of the journal;
- 2) Obstacles, challenges and achievements of the journal and strategies carried out to face obstacles and challenges;
- 3) Articulation of the journal to the institutional and national policies in S&T and higher education;
- 4) National, regional and global factors influencing the journal.

University authorities included vice rectors for academic affairs, vice rectors/directors of institutional research, directors of university press units, school deans and/or head librarians. Since this study explores institutional policies, arrangements, and actions to promote the publication of refereed journals, university authorities are the main informants. Interviews with authorities were not possible in all cases, hence one or two interviews with journal editors were used instead. The questions for university authorities were intended to learn about institutional goals, policies and strategies for:

- 1) Research development and organization;
- 2) Development of refereed journals;
- 3) Institutional policies, arrangements, and actions to support journal publication;

- 4) Positioning the university research and publications at the national, regional and global levels.

Audiotaped interviews conducted in Spanish were transcribed and consolidated in a Word® document. They were not translated into English. The transcriptions were organized by country (Chile, Colombia, and Venezuela) and by source of information or type of institution (expert/national authority, private Catholic university, largest public university, and other two major public universities).

3.4 DATA ANALYSIS

Data analysis in this study has deductive and inductive components. The deductive component comes from a modification of the analytical model of allomorphy developed by Vaira (2004) and from the field research carried out by the author in the countries where the interviews were conducted. As the discussion of the issues about journal publication advanced, the questions asked to the interviewees and the terminology became more refined. On the other side, the inductive component came from the reading of the interviews. As it is described below, there were two stages in the analysis of data, one where initial themes and categories were identified and listed and another one where common threads and categories and indicators were determined. Inductive analysis was the result of the “immersion in the details and specifics of the data to discover patterns, themes, and interrelationships” (Patton, 2002. P. 41). The result was the creative synthesis. In addition, qualitative comparative analysis was carried out at the institution

and nation levels when the categories identified were used to discover patterns and unique traits in the cases included in the study (Patton, 2002).

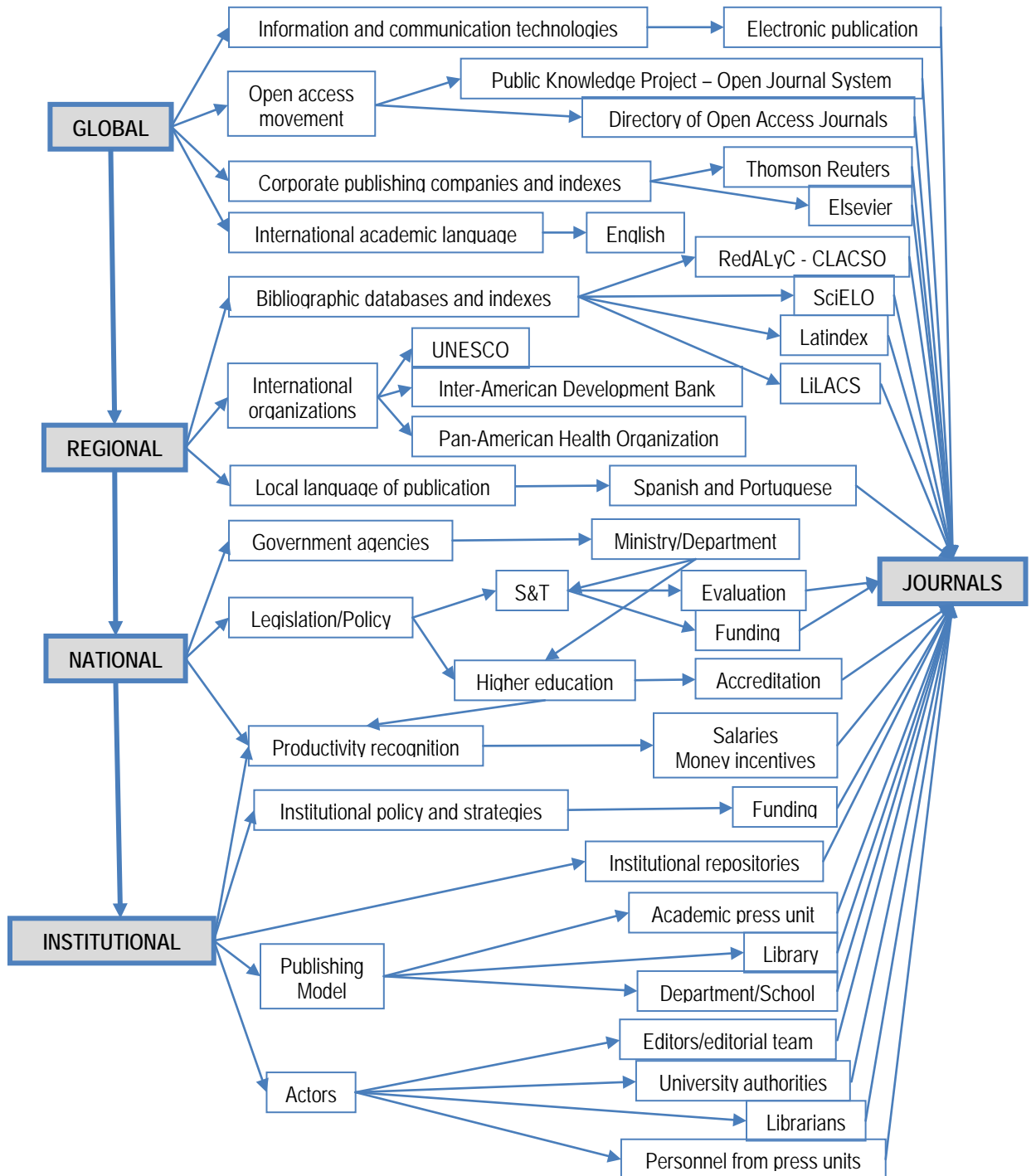


Figure 2. Factors associated with/influencing journal publication in Latin America

A preliminary diagram/map was created based on the findings from the field research conducted between 2008 and 2010 and a review of relevant literature. The diagram/map includes several factors that are associated with and/or influence the publication and current growth of journals in LA&C, in particular the three countries in this study. Based on the analytical model of Allomorphism (Vaira, 2004) and the adaptation made by Yoder (2006), four levels of analysis were created: global, regional, national, and institutional. The factors influencing journals were matched with/assigned to one of those levels of analysis (Figure 1). Since this diagram/map focuses on the journals and not on the institutions that publish the journals, that is, the traditional/prestigious universities from Chile, Colombia, and Venezuela, further diagrams/maps are created as a result of the analysis of the data.

The qualitative analysis was performed using the MS Word's track changes feature. In a first step, a careful and detailed reading of the transcripts was carried out and text sections of different extension were marked to add comments that included initial themes, categories, subcategories, and ideas for discussion (Figure 3).

- Diferente. Cualquier revista puede ser arbitrada. ¿Cuál es la diferencia real? Puede ser una revista profesional cuyo público es diferente de una revista científica. Ahí se da mucho. Nos ha pasado en las evaluaciones, porque hay tanto carácter endogámico. Los que publican son en un 80% de la propia institución. Esas revistas fueron creadas con ese fin. Tienen más carácter de profesionalismo.
- Estamos pensando en desarrollar un sistema de evaluación de revistas. Tenemos mucha demanda de revistas sobre todo de universidades. Hemos hablado con Patricia de la posibilidad de desarrollar algo como Publindex que es una base de datos que te da la posibilidad de tener el estado del arte de las revistas nacionales. Con SciELO no te sucede eso porque es una base de datos más, claro que guardando las proporciones, como lo puede ser ISI o Scopus, o cualquier otra base de datos, que tiene sus propios criterios de selección. Es como un índice selectivo, en cambio Publindex es la base de datos nacional donde postulan revistas colombianas y al mismo tiempo te pueden ir dando ranking de acuerdo a edición que tengan de acuerdo a los criterios. Puedes establecer fácilmente el ABC, Estas revistas cumplen esto, estas otras no. Entonces es una forma con mucho más fluida. Este grupo que está en C tiene más posibilidades de abrirse a nivel nacional que sería SciELO, o regional, o internacional directamente. Las evaluaciones las tenemos, los datos los tenemos, pero no tenemos la connotación de una base de datos, digamos, donde esté todo ese grupo incorporado. Claro, tenemos las evaluaciones, tenemos los datos de las evaluaciones, eso está almacenado.

Comment [a1]: Journal

- Research, scientific/scholarly, academic, peer-reviewed/refereed?
- Institutional endogamy

Comment [a2]: Government policy/agency to develop journals

- Journal evaluation system
 - o Publindex
 - o Chile-talked about
 - o Advantages: national state of the art

Comment [a3]: International indexes

- Advantages: inclusion criteria
- Disadvantages: less selective, more general

Comment [a4]:

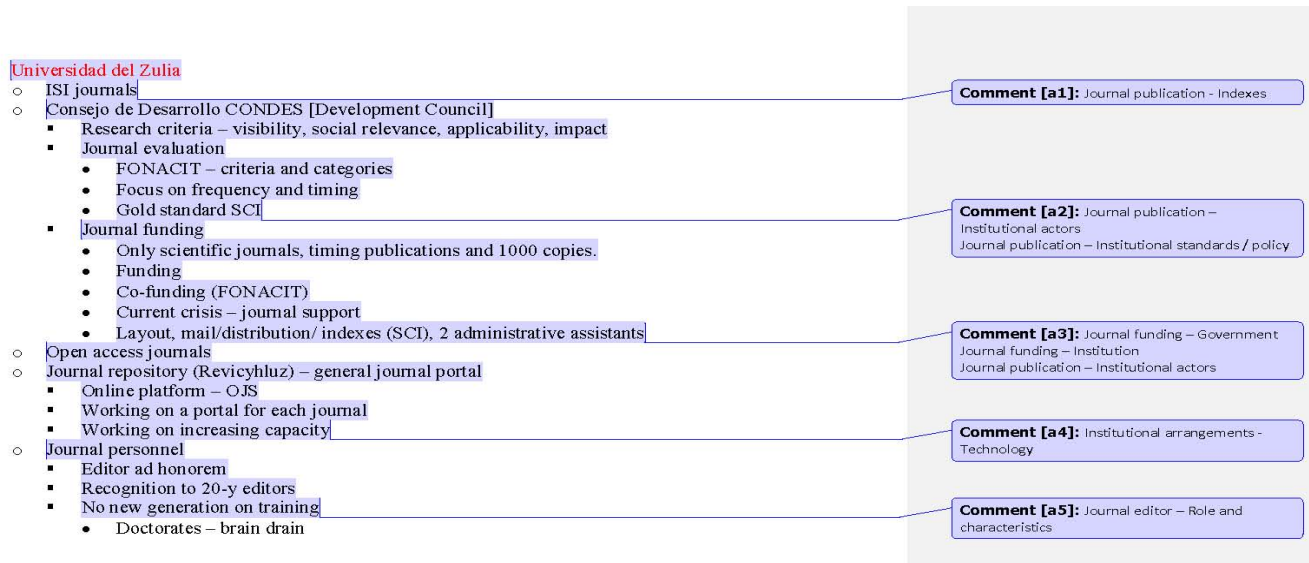
- o Publindex
- o Advantages: Ranking, Opportunities for internationalization

Comment [a5]:

- Journal evaluation system
- o Chile-have journal evaluations stored

Figure 3. Sample of text with initial analysis of transcripts

Every time a new theme, category, or subcategory was identified or created, it was added to a list of themes and categories in another document (second step). Key ideas or issues were also included in the list. With this list new and fewer categories were created adding comments



with the MS Word’s track changes feature (Figure 4). See Appendix B for the codebook.

Figure 4. Fragment of analysis of initial categories and subcategories

In the third step, six supra categories were created to group the categories associated with global, regional, and national pressures and trends (conditioning factors) regarding the publication of journals. A seventh supra category was created to group university policies, arrangements, and actions (university responses) to support the development of journals.

- Supra category: University policy, arrangements, and actions
 - Category: Actors
 - Subcategory: Authorities and journal coordinators
 - Subcategory: Institutional actors
 - Subcategory: Journal editors and editorial teams
 - Category: Policy, strategies, and resources
 - Subcategory: University actions

- Subcategory: Publication formats
 - Subcategory: Journal funding
- Supra category: National Trends and Pressures
 - Category: Government political trends
 - Subcategory: Market oriented – Chile, Colombia
 - Subcategory: Socialism – Venezuela
 - Category: Public funding
 - Category: National journal evaluation systems
 - Category: Product-based salaries
 - Subcategory: Salary bonuses
 - Subcategory: Salary increments
 - Category: University accreditation
 - Category: University rankings
- Supra category: Global pressures and trends
 - Category: Publication formats
 - Subcategory: Electronic – Open access
 - Subcategory: Print publication
 - Category: International organizations
 - Category: Journal scope - Exogamy
 - Subcategory: Mainstream journals/indexes
 - Subcategory: Locally oriented journals/indexes
 - Category: Language of publication
 - Subcategory: English
 - Subcategory; Local languages
 - Category: Imposed paradigms
 - Subcategory: Natural science tradition
 - Subcategory: Social science and humanities tradition

3.4.1 University policies, arrangements and actions taken to develop journals

The fourth step consisted of the analysis of *university policies, arrangements and actions*. Three matrixes including the categories, subcategories and indicators in this supra category were created. Each table included columns for the four universities studied in each country. To fill the tables out, a new reading of the transcripts and list of categories was carried out. The results will include the tables and an analysis of this supra category (Tables 11-13). The following is the description of the analysis carried out.

Two large categories were created to study the responses of Chilean, Colombian, and Venezuelan major traditional research universities to global, regional, and national pressures and trends for the development of scholarly/scientific journals. They were: 1) actors, and 2) policy, strategies and resources.

The supra categories are *etic* categories (Patton, 2002), since they were created based on the allomorphism model developed by Vaira (2004). Likewise, the categories and subcategories created from the analysis of the interviews are *etic* categories based on organizational language and terminology on scientific/scholarly publication.

The category *actors* explores if university authorities and key actors/university units are involved in decision-making and support the publication of journals. This category is divided into three subcategories: authorities, actors, and journal editors. The subcategory *authorities* has as an indicator the existence of a director/coordinator of university journals and the university unit where that person would belong to. The subcategory *actors* identifies university units and personnel involved in the publication of journals and their role. The subcategory *journal editors* looks at different roles and characteristics that editors may have within the institutions.

The category *policy, strategies and resources* analyzes what universities are doing to provide the conditions necessary for the publication of journals. This category is divided into four subcategories: university actions, publication formats, journal funding, and journal sustainability. The subcategory *university actions* describes the main actions taken by the university to support the journals. The subcategory *publication formats* identifies the balance between print and electronic publication, use of OA, platforms used for electronic publishing, and if journals are reachable and/or available from the university website/repository. The subcategory *journal funding* looks at sources of journal funding. The subcategory *journal*

sustainability analyzes if the institution has a policy to guarantee sustainability of journals, including funding, willingness of authorities to support journal sustainability, and archiving capacity.

The category *journal management* is intended to describe the existing arrangements for the publication of journals. It includes the subcategories personnel, journal standards and organization, and visibility. The subcategory *personnel* identifies staff working in edition of a journal. The subcategory *journal standards and organization* looks at the sources that journal editors and staff use as reference to improve organization and publication. The subcategory *visibility* looks at strategies that journals use to increase their readership and authorship, as well as to be recognized by national and international academic audiences. The indicator is the inclusion of journals in bibliographic indexes and databases.

3.4.2 Analysis of university responses to pressures and trends

The fifth part of the data analysis describes how universities respond to the national, regional, and global trends and pressures that influence directly or indirectly the publication of scholarly/scientific refereed journals. The analysis is carried out using Allomorphism as analytical framework to describe and understand the unique institutional responses (diverging) to external influences as well as patterns (converging) (Vaira, 2004; Yoder, 2006) regarding the university policies, arrangements, and actions to promote and support the publication of scholarly/scientific peer-reviewed journals in 12 LA&C public and private universities from Chile, Colombia and Venezuela. An expansion of the Glonacal agency heuristic (Margison & Rhoades, 2002) is used to identify how those unique responses and patterns relate to converging levels. The dimensions, forces or converging levels will be global, regional, and national. The

supra categories created from the data will guide the organization of the analysis. At the beginning of each section, the converging trend is described and is followed by the analysis of the university responses. In this section, a more narrative style (story-telling) is used to present the findings.

3.4.3 Neutrality and trustworthiness

The present study used an analytical framework (allomorphism) to provide levels of analysis to the data (Vaira, 2004). The model identifies global pressures that are inflicted on nation-states and universities, as well as pressures from the nation-state on universities. For this study, it was considered that adding the regional level and trends would give more options for analysis. However, in order to adopt a stance of neutrality regarding the phenomenon under study (Patton, 2002), the researcher did not manipulate the data to arrive to a pre-established truth. The levels of analysis were used to facilitate answering the research questions. The investigator was committed to understand the phenomenon as it unfolded and the multiple perspectives that emerged from the data analysis. To assure that neutrality, in a number of times findings from the interviews were contrasted with responses of several interviewees and complemented with analysis of documents and websites. In addition, interviews represent different kinds of informants: journal editors, university authorities, experts, and officers of government agencies. Having answers from a variety of respondents also guaranteed different points of view of the phenomenon.

4.0 FINDINGS

4.1 SUMMARY

The findings about institutional policies, arrangements, and actions to promote the publication of journals in universities from Chile, Colombia, and Venezuela are summarized in Tables 11-13. They are organized by country. The description ranges from unique traits such as creation by a university of a repository based on the SciELO methodology to issues common to all the universities such as the use of open access for the publication of journals as well as the existence of some kind of institutional funding for the journals. In a second part, the analysis focuses on how the policies, arrangements, and actions show responses to the national, regional, and global pressures and trends. Issues such as productivity-based salaries, the impact of journal evaluation systems or funding programs, and the existence of indexes at the global and regional levels are analyzed.

4.2 SUPRA CATEGORY: UNIVERSITY POLICIES, ARRANGEMENTS, AND ACTIONS TO SUPPORT JOURNAL PUBLICATION

4.2.1 Actors: authorities and journal coordinators

The category *actors* explores how university authorities and key actors/university units are involved in decision-making and support the publication of journals. The first subcategory, *coordinator*, has as indicators the existence of a director/coordinator of university journals and the university unit where that person would belong to.

In general, the 12 universities included in this study are complex institutions with different governance, organization, and structures. However, some patterns can be identified. For instance, the largest and most prestigious public universities in the three countries, Universidad de Chile, Universidad Nacional de Colombia, and Universidad Central de Venezuela are highly **decentralized institutions**, whose schools, departments, and centers are governing, organization and financially autonomous academic units. This argument can be supported by the following question that an interviewee from the Universidad de Chile asked when he learned about my project,

ENG: How do you manage to talk about policies when Chile has 90 universities, and within the largest ones each department has its own policies?

SPA: *¿Cómo te las arreglas para hablar de políticas cuando Chile tiene 90 universidades, y dentro de las más grandes cada departamento tiene sus propias políticas?*

COMMENT: The answer was that the study was looking for trends by studying cases.

The next fragment serves as support of the argument for the Universidad Nacional de Colombia,

ENG: The University does not have a policy to fund its journals. Each school has to determine in its budget the funding for journals and each journal must consider selling advertisements, subscriptions, etc. Basically, all the journals of the university depend on the department/institute/unit that publishes them. At the moment, there is not any university policy to support print journals. ... A need for editorial policies has emerged, but it is not being done as a university but as a school. For example, at this moment, the school of medicine already created an editorial committee with policies, and I believe that each unit is contributing 3% of its resources for this committee.

SPA: *La universidad no tiene ninguna política para el financiamiento de sus revistas. Cada facultad tiene que determinar dentro de su presupuesto la financiación de las revistas y cada revista debe considerar si vende pauta, suscripciones, etc. Básicamente todas las revistas de la universidad dependen del departamento/instituto/dependencia que las esté publicando. En este momento no hay ninguna política de la universidad para el apoyo a las revistas impresas. ... Se ha creado una necesidad de políticas editoriales, pero no se está haciendo como universidad sino como facultad. Por ejemplo, en este momento en la facultad de medicina ya se formó un comité editorial, con unas políticas y creo que ya cada dependencia está aportando es el 3% de sus recursos para ese comité editorial.*

Among the three largest public universities in the study, the Universidad Central de Venezuela is maybe the most complex, or maybe least centralized, in terms of organization and policy. There is not a unified policy for the publication of journals, and when there have been attempts to create one, they are aborted with changes in commissions and university authorities (elected positions for specific periods). This is complicated with the current political context in the country (2009).

ENG: ... One of the reasons [for the failure of some journals] is that we do not have a university policy for the publication of journals. I have been here since 2000 and every time commissions are created but do not achieve anything and change again because there are elections every four years starting everything again. Funding, lack of policies, and the political problem... The UCV has 17 press units, with different levels of consolidation among schools and research centers. This kind of things happens all the time also because of the size of the UCV. In some cases, they [publications] do not meet even minimum criteria like [having] ISBN: humanities, law and political science, etc.

Many schools do not subsidize their own journals like humanities that has 14 journals. How do they do?

SPA: ... *Una de las razones [del fracaso de algunas revistas] es que no tenemos una política universitaria de publicación de revistas. Yo llevo desde 2000 aquí y cada vez hay comisiones que no llegan a nada y vuelven a cambiar porque hay elecciones cada 4 años y todo vuelve a empezar. Financiamiento, falta de políticas y el problema político... La UCV tiene 17 fondos editoriales, con diferentes niveles de consolidación en las facultades y centros de investigación. Este tipo de cosas pasa también por el tamaño de la UCV. En algunos casos, [las publicaciones] no cumplen ni siquiera los aspectos mínimos como el ISBN: humanidades, jurídicas y políticas, etc. Muchas facultades no subsidian sus propias revistas, como humanidades que tiene 14 revistas. ¿Cómo lo hacen?*

The previous universities do not have an overarching authority/position to coordinate university journals. Academic units may or may not have a person responsible for publications. For example, the Universidad de Chile School of Social Sciences has a director of research and publications who establishes general criteria and provides some funding for journals but individual departments within the school are autonomous to determine their organization and criteria to develop their own journals.

ENG: There is not a unique unit within the university. Each school generates its own journals and publications. The School of Social Sciences has its own coordination of research and publications. We try to promote that every study has a publication. Besides the (six disciplinary) journals, there are books. There are departments like Sociology that have their own journals and books; they are working in partnership with a [external] press unit that publishes all their publications.

SPA: *[En la universidad no existe una única unidad. Las facultades generan sus revistas y sus publicaciones. La facultad de ciencias sociales tiene su propia dirección de investigación y publicaciones. Nosotros tratamos de vincular que cada investigación tenga una publicación. Además de las revistas (seis disciplinarias), son los libros. Hay departamentos, como el de sociología, que tiene sus propias revistas y libros; ellos se asociaron con una editorial que les saca las publicaciones.]*

Among the other public universities of the study, Universidad de Concepción (Chile), Universidad de Antioquia (Colombia), and Universidad del Zulia and Universidad de Los Andes

from Venezuela, have a specific **person/unit in charge of developing journals**. In the case of Universidad de Concepción, the coordinator of journals is the editor of Atenea, the oldest Chilean journal (founded in 1924). He is also the director of the university press unit. The focus in this university has been the top-ranked journals that are included in the Thomson Reuters' WoS and SciELO,

ENG: The university press unit supports SciELO and ISI journals, basically with the edition and printing expenses... We have supported some journals that without being [in the indexes] have some possibilities. The problem is that many of them publish one or two issues and then disappear. Among those we have supported are Cuadernos de Filosofía, Agrociencias (in Chillán) from the School of Veterinary Medicine, and Paideia that is a journal of education.

SPA: *El sello editorial apoya a las revistas SciELO e ISI, básicamente a sacar los costos de edición e impresión... Hemos apoyado algunas revistas que sin estar, tienen alguna posibilidad. El problema es que de muchas se publica uno o dos números y desaparecen. Entre las que hemos apoyado están Cuadernos de Filosofía, Agrociencias (de Chillán) de la facultad de veterinaria, y Paideia que es una revista de educación.*

The Universidad de Antioquia in Colombia has a leader of the committee of journal editors and serves as a liaison between the committee and the Vice Rector for Research. Currently (2011), this person is a professor from the School of Library Science but at the time of the interview for this study (2009) the leader was a journal editor. At the Universidad del Valle, there is some coordination by the editorial committee.

Regarding Venezuelan public universities, there are common units called the councils for scientific, humanistic, and technological development that are in charge of promoting research. The council at the Universidad del Zulia is called CONDES, whose director and staff make and implement the policy to develop the university journals. They have emphasized OA publication and the need to get journals included in the most prestigious indexes, mainly those of the WoS. They are proud to have seven journals in the index,

ENG: There are 28 journals at the LUZ. ... In 2008, the LUZ had seven of the nine Venezuelan journals included in the SCI. ... This effort that started in 2001 makes us have the majority of the mainstream journals in Venezuela. ... 20% of the mainstream journals from Zulia in the SCI are from veterinary and agronomy, and more than 50% are from medicine and biology.

SPA: *Hay 28 revistas en la LUZ. ... En el 2008, la LUZ tenía siete de las nueve revistas venezolanas en el SCI. ... Este esfuerzo desde el 2001 hace que sostengamos la mayoría de las revistas de impacto en Venezuela. ... 20% publicaciones de impacto del Zulia en el SCI son de ciencias veterinarias y agronomía, y más del 50% son de medicina y biología.*

The council at the Universidad de Los Andes, the CDCHT, has an expert in library science as coordinator of journals who has created a strategy to develop the institution's publications,

ENG: I am [working] at the CDCHT since 2004 and have bachelor's degree in library science. In addition, I worked 18 years at the library but I am more interested in publications. When I arrived to the CDCHT there was funding for journals; I proposed to include advice/support to improve the quality of the journals. Thus, an improvement plan was created.

SPA: *Yo estoy en el CDCHT desde 2004 y soy licenciada en bibliotecología. Además trabajé 18 años en la biblioteca pero estoy más interesada en las publicaciones. Cuando llegué al CDCHT solo se financiaba las revistas; yo propuse también asesoraría para mejorar la calidad de las revistas. Entonces se creó un plan para el mejoramiento.*

In addition to the public universities, three large private Catholic universities were included in the study, Pontificia Universidad Católica de Chile, Pontificia Universidad Javeriana (Colombia), and Universidad Católica Andrés Bello (Venezuela). The last two universities are entrusted to the Society of Jesus religious order, while the first one is an independent institution. The Pontificia Universidad Católica de Chile does not have a position assigned to coordinate journals; however, the office of the Vice Rector of Communications and Continuing Education is in charge of establishing some standards for the publication of journals,

ENG: Interviewee 1. The division of communications [of the office] of the vice rector of the university realized that the university had many journals and there was not a thread. They gathered information from all the schools and [the Direction of] Communications created an area that is in charge of all the journals. They conducted a study of the journals about the guidelines and standards that should serve as frame for them. ... Interviewee 2. The university established some norms but we [the editors] are in charge of everything. [They are] norms like the logo; there are style rules such as the size regarding the logo of the institute. [Each editorial unit is autonomous] What is more important are the norms of the indexation services.

SPA: *Entrevistado 1. [En] la dirección de comunicaciones de vicerrectoría de la universidad se dieron cuenta que la universidad tenía muchas revistas y que no había una línea. Reunieron información de todas las facultades y [la Dirección de] Comunicaciones creó un área que se hace cargo de todas las revistas. Hicieron un estudio de las revistas, de las formas que deben enmarcarse dentro de los lineamientos. ... Entrevistado 2. La universidad pone ciertas normas pero nosotros [los editores] nos encargamos de todo. [Son] normas como el tema del logo; hay normas de estilo, como su tamaño en relación con el logo del instituto. [Cada ente editor es autónomo] Lo que pesa más son las normas de los indizadores.*

The Vice Rector for Academic Affairs of the Pontificia Universidad Javeriana in Bogotá created the position of coordinator of scientific journals that is affiliated with the university press unit. This person is in charge of the technical development and strategic positioning of the university journals. These are the antecedents:

ENG: [In the] 1990s, [journal editors were unhappy due to] the amount of work and the excessive workload that Publindex implied. ... This was heard by the Vice President for Academic Affairs. ... A weakness of Javeriana was the lack of clear processes for the publication of scholarly and scientific journals. [There were] more meetings with editors at the university, some supported by the Observatory of Science and Technology, and some by the university library in processes like EBSCO and SciELO. With the help of a couple editors, psychology and management, statistics and results of what was happening and trends were shown to the deans at the University Academic Council. They started to seek the best, effective and viable solution. There are universities that, from the office of the academic vice rector, have people hired to work exclusively with editors on these issues; it was also perceived that it was a work that should be developed at the university press units. And that work should be geared to many university units in order to really work. The decision of the vice rector was to create a position.

SPA: *[En los] años noventa, [había descontento entre los editores por el] gran trabajo y carga laboral que implicaba Publindex. ... Esto llegó a oídos de la*

Vicerrectoría Académica. [Las revistas están] atadas por los indicadores de ISI y de producción de rankings universitarios, más acreditación institucional. Una falencia de la Javeriana era la falta de procesos claros de publicación de revistas académicas y científicas. [Hubo] más encuentros internos de editores, unos ayudados por el Observatorio de Ciencia y Tecnología, y otros por la biblioteca por procesos como EBSCO y SciELO. Se mostraron a los decanos en el Consejo de la Universidad, con un par de editores, psicología y administración, estadísticas y resultados de los que estaba pasando y tendencias de lo que se iba desarrollando. A partir de eso, comenzaron a buscar la mejor solución efectiva y viable. Hay universidades que trabajan desde las vicerrectoría de investigaciones con gente dedicada exclusivamente a trabajar estos temas con los editores; también se vislumbraba en las editoriales que era un trabajo que había que desarrollar ahí. Pero es un trabajo que tiene que ir engranado con muchas partes de la universidad para que funcione realmente. La decisión del vicerrector de ese momento fue, hay que crear un cargo.

This person has been successful in getting 22 journals included in the Colombian Bibliographic Index Publindex. The following interview extract shows how the new position at Javeriana was envisioned when it was created,

ENG: Thus, it was thought to create a position either from the office of the Vice Rector for Academic Affairs or from the university press unit. At the end, due to practical reasons, it was decided to do it at the press unit because there were some journals to be created by the doctoral programs. There was work to be done from the first to the last page with a strategic planning for new journals and more advanced journals that are looking at a larger framework. Therefore, it had to be done from both perspectives.

SPA: *Entonces, se pensó crear un cargo desde la vicerrectoría académica o desde la editorial. Al final se decidió por asuntos prácticos hacerlo desde la editorial porque había revistas para crear en el doctorado. Había que hacer un trabajo muy del día a día, desde la página inicial hasta la última página, con un planeamiento estratégico para revistas incipientes y hay revistas muy avanzadas que están mirando un marco grande. Entonces había que hacerlo desde las dos perspectivas.*

The third Catholic university, the Universidad Católica Andrés Bello, is a teaching higher education institution that has grown and developed some research in recent decades. Research and publications are incipient in this institution and they are coordinated at the press unit. Most journals, however, are the result of individual editors' efforts,

ENG: Research started 10-15 years ago. ... Number of journals has grown a lot at the UCAB. ... I came to this university in 1993 and it was very small. It has grown a lot. ... I edit the journal without assigned hours for it. I am a full-time professor and among my responsibilities I teach two classes, have a research project with AUSJAL [Association of Universities of the Society of Jesus in Latin America], journal, hours of my doctoral study, thesis committees, and academic reform. Everything is mixed. I try to work 3 hours a week [on the journal] but it competes with my other duties. We all do the same way. ... Journals are indexed due to our individual effort, not for some university policy.

SPA: *La investigación entró hace como 10-15 años. ... Las revistas han crecido mucho en la UCAB en términos numéricos. ... Llegué a esta universidad en el año 93 y era chiquitica. Ha crecido mucho. ... Hago la revista sin horas asignadas formales. Yo soy profesor de tiempo completo y dentro de mis tareas tengo dos clases, proyecto de investigación con AUSJAL [Asociación de Universidades de la Sociedad de Jesús en América Latina], revista, horas de doctorado, comités de tesis y reforma académica. Todo está mezclado. Trato de dedicarle unas 3 horas a la semana pero compite con mis otras labores. Todos hacemos así. ... Revistas indizadas por nosotros por esfuerzo individual, no por alguna política de la universidad.*

The involvement of university authorities in the development of scholarly/scientific journals varies from one university to another. It may be related to **institutional factors** such as the institution's structure and organization, centralized/decentralized governance, and research tradition. In more complex and democratic universities (Católica de Chile, Universidad de Chile, Austral, Nacional de Colombia, Antioquia, Valle, and Central de Venezuela), governance is more decentralized and authorities supporting the development of journals might be found in more local units such as schools, centers, or departments. In institutions with more centralized authority or maybe more leadership of central units such as councils of research and development (Zulia and Andes) and vice rectors for academic affairs or research (Javeriana), it may be possible to find a specific person/position in charge of providing guidance and support to journals. Personality (Javeriana, Zulía, and Andes), journal publishing experience (Concepción, Javeriana, and Andes), and qualifications, including library science (Antioquia and Andes) and management (Javeriana), are characteristics that can contribute to the work of those

in charge of supporting journals. In institutions with less research tradition (Andrés Bello) involvement of authorities at any level to support the publication of journals may be small.

It could be expected that journal editors and editorial committees are autonomous to develop their publications. The role of university authorities on the publication of journals is more oriented to guarantee university uniformity standards (Católica de Chile) and to meet national and international academic and publishing standards (Concepción, Antioquia, Javeriana, Zulia, and Andes).

In short, university authority involvement in the development of journals varies among institutions. However, a pattern consisting of an office or a person/position in charge of supporting institutions' journals was identified among some universities in this study (Concepción, Javeriana, Antioquia, Zulia, and Andes).

4.2.2 Actors: institutional actors

The second subcategory, *institutional actors*, identifies university units and personnel involved in the publication of journals and their role. In the previous section, authority involvement in the publication of journals was described and analyzed. Besides the editor and the editorial team, and possibly some authorities, there are other actors external to the journals but internal to the institutions who participate in the publication of journals. One is the **university press unit**. Not all universities in the study have a press unit. In most of the universities this unit was only important for printing and in fewer cases distribution services. When existing, university presses focus mostly on the publication of books.

At the Universidad de Chile, even though there is a university press unit, it is not seen by the interviewee as an important actor involved in the publication of journals. The role of the press unit could be in technical and distribution issues but not in the management of journals,

ENG: There is not participation of a press unit. Everything is the work of scholars. An actor could be a printing unit, but nothing like a press unit managing the journals, maybe supporting printing and distribution, but nothing else.

SPA: *No hay involucramiento de un sello editorial. Todo es trabajo de académicos. Un actor podría ser una imprenta, pero nada como una editorial que gestione las revistas, tal vez apoye funciones de impresión y distribución, pero nada más.*

Similarly, the press unit of the Universidad de Antioquia seems to be so busy with the publication of books that editors do their own publishing process. However, it is recognized that the unit participates providing the material to the printing unit to develop the layout of journals,

ENG: Each journal at the University does it in different ways because the press unit of the Universidad de Antioquia has too much work and we would have to be in line a couple of years to get a material published. Therefore, each journal has an independent editorial process. The only thing they do is to provide the electronic version of documents to the press unit for layout.

SPA: *Cada revista de la universidad lo hace de una manera diferente porque la editorial de la Universidad de Antioquia tiene demasiado trabajo y casi que uno tendría que hacer fila de dos años para publicar un material. Entonces cada revista tiene su proceso editorial independiente. Lo único que hacen es entregarle los documentos electrónicos a la imprenta para la diagramación.*

La Universidad del Valle also has a press unit and, as well as the previous two universities, its role seem to be more important in the publication of books. This unit also participates in the design of journals, and provides the guidance for journals to meet the Publindex criteria,

ENG: There is an editorial committee here whose purpose is publishing books. They do the layout. There are also some guidelines that journals of the university should meet following the Publindex criteria.

SPA: *Aquí hay un comité editorial cuya función es publicar libros. Ellos hacen la diagramación. También hacen algunos lineamientos para que las revistas de la universidad cumplan con los criterios de Publindex.*

There are, however, some exceptions. One example is the Universidad de Concepción press that supports the publication of highly ranked journals. This unit offers funding as well as proofreading and layout services, but not printing. Printing is outsourced outside the university.

ENG: The university press unit [Sello Editorial] was born in 2000. Before, there was a sub direction of university publications. The creation of the Sello implies the creation of a policy. ... The Sello collaborates [with the journals] doing the layout, proofreading. We do not have a printing unit. We outsource with an external printing company. We work with a company... that has cutting edge technology. But we have a pre-print office where we do layout, turn texts into PDF format, and send them to the printing company for printing. We have a chief editor in charge of this process.

SPA: *[El] Sello Editorial de la universidad nació en el año 2000. Anteriormente existía una subdirección de publicaciones de la universidad. La creación del sello implica la creación de una política. ... Se les colabora [a las revistas] con la diagramación, la corrección de estilo. Nosotros no tenemos imprenta. Se contrata con una imprenta de afuera. Tenemos una empresa... que tiene tecnología de punta. Pero nosotros tenemos una oficina de pre-print en la que diagramamos el texto, imprimimos el texto en PDF y se lo enviamos a la imprenta para impresión. Tenemos un editor jefe que se encarga de todo ese proceso.*

As mentioned above, the Pontificia Universidad Javeriana press (Editorial Pontificia Universidad Javeriana) coordinates editing, layout, proofreading, and printing services; it serves as a bridge between the journals and the legal unit, the ICT unit, and the library; it also coordinates strategies to make alliances with indexing organizations and works in collaboration with the office of the Vice Rector for Academic Affairs to develop the policy for journal publication,

ENG: At the beginning, [we worked on defining and developing] expectations of responsibilities and tasks of this position. It could have [just] limited to procedural issues or to go beyond to articulate strategic issues of the journals with other university units and with other key actors for the development of the journals. The conclusion of the director of the university press unit and the vice rector was to improve the procedures and

to do the strategic work with internal and external actors. ... One of the areas we have developed is the legal and everything that is related to copyright and creative commons (author rights and open access). ... We have advanced in informatics issues. The university created the Ático project that manages OJS and everything related to software and hardware. ... Now we are working on operative aspects: Publindex, national and international indexations that we do teaming up with the library and the editors...

SPA: Al principio, [trabajamos definiendo and desarrollando las] expectativas de responsabilidades y funciones del cargo. Podía haberse quedado en asuntos procedimentales o ir más allá para engranar asuntos estratégicos de las revistas con otras dependencias de la universidad, y con otros actores que sean claves para el desarrollo de las revistas. La conclusión con el director de la editorial y el vicerrector fue mejorar procesos y hacer el trabajo estratégico con actores internos y externos. ... Uno de los temas que no se ha logrado desarrollar es el tema jurídico y todo lo que tiene que ver con copyright más creative commons (derechos de autor y open access). ... Se ha avanzado en temas informáticos. La universidad creó el proyecto Ático desde donde se maneja OJS y todo lo que tiene que ver con software y hardware. ... Ahora entramos en las partes operativas: Publindex, indexación nacional, [e] indexaciones internacionales, que trabajamos en conjunto con la biblioteca y editores...

This university also has a printing unit (Javegraf) where most journals are printed.

Javegraf also offers editing, layout, and proofreading services to some journals, competing with the press unit by offering this kind of technical services.

ENG: That [advise and strategic work] is done independently if the journal is published with the press unit or not. Some do proofreading with Javegraf... working directly with the proofreader and the person in charge of doing the layout design.

SPA: Eso se hace independiente si la revista se hace con la editorial o no. Algunos hacen correcciones con Javegraf... trabajar directamente con corrector de estilo y diagramador.

At Universidad Católica Andrés Bello, the press unit is in charge of the publication process. However, based on the experience of the interviewee, it does not have a close relation with the editors.

ENG: The university press [Publicaciones] designs the layout and prints the journal but I do not have control over the electronic publication of the journal. ... The library and the university press have the same director even though they are different units. ... The university press also distributes the journals but there are not policies.

SPA: Publicaciones diseña e imprime la revista pero yo no tengo dominio sobre la publicación electrónica de la revista. ... Biblioteca y publicaciones tienen al mismo director aunque son dos unidades diferentes. ... Publicaciones también distribuye las revistas pero no hay políticas.

The Universidad Central de Venezuela is a particular case because it has 17 press units, including the one that is part of the Council for Scientific and Humanistic Development (CDCH, acronym in Spanish). The need for a policy is expressed by two interviewees. One of them says states that the policy is necessary and it should come from the university authorities, not from the editors,

ENG: The University has its press unit that depends on the office of the Vice President for Academic Affairs, editions of the university central library. They do not finish instrumenting a policy. A university company, a company. I read between the lines that they are waiting for us to take charge of it.

SPA: La universidad tiene su editorial que depende del vicerrectorado académico, ediciones de la biblioteca central de la universidad. Ellos no terminan de instrumentar una política. Una empresa universitaria, una empresa. Yo leo entre líneas que ellos esperan que nosotros nos encarguemos de esto.

On the other side, the need for the policy is seen as urgent but it seems that the size and complexity of the university makes it a complex task,

ENG: The UCV has 17 university press units. We need to unify a policy with different levels of consolidation within the schools and research centers. This sort of things happens due to the size of the UCV.

SPA: La UCV tiene 17 fondos editoriales. Falta unificar una política con diferentes niveles de consolidación en las facultades y centros de investigación. Este tipo de cosas pasa también por el tamaño de la UCV.

All the institutions in this study have a university press unit and most of them focus mainly on the publication of books, according to the interviewees. However, they contribute to the publication of journals through proofreading, layout, printing, and distribution services. Not

much detail on how those services are provided can be obtained from the interviews or the websites. What the interviewees miss is the management part, not necessarily by taking the press unit charge of the article evaluation or journal editing but providing guidance possibly to improve processes and position the journals. The Javeriana University press stands out in this group due to the work that the unit and its journal coordinator have done supporting technical processes, positioning strategically the institution's journals in the national and international context (indexes, databases, and the organization that provide those services), participating in the writing of a policy for the publication of journals, and being a bridge between the journals and other units within the university such as the legal department, the library, and the ICT unit. Pontificia Universidad Javeriana publishes 24 journals and all of them are included in different categories of Publindex. Given the number of journals from this institution that have achieved recognition at the national index, two further research questions would be: How do the Pontificia Universidad Javeriana respond to issues such as journals funding and what does it mean for a university to publish a large number of journals? A similar case comes from the Universidad de Concepción where the university press supports the most highly ranked journals with funding, technical processes, and support for the data processing to publish the journals in SciELO. Currently, there are six journals from the Universidad de Concepción supported by the press unit published in SciELO. A further question would be: What happens with the journals that are not supported by the press unit at the Universidad de Concepción? On the other side, the Universidad Central de Venezuela, as it has been mentioned before, has 17 press units at the different academic units and the CDCH. There was not much detail in the interviews about the kinds or the quality of publications that are originated in those press units. However, it was expressed that

the products of those units do not have similar levels of quality and it is necessary a university wide policy about publications.

In short, even though the universities in this study have all press units, their role is mostly related to technical issues and distribution. This situation and the achievements of the Pontificia Universidad Javeriana and the Universidad de Concepción press units are worth to further study regarding the challenges that university press units face to contribute to the development of periodical publications. Likewise, the proliferation of press units at the Universidad Central de Venezuela is another issue for future research.

Another actor related to the publication of journals is the **university library**. Besides managing the collections, acquiring databases, and exchanging journals with other libraries, libraries have gained relevance with the development of electronic publication and ICTs. In universities such as Austral from Chile, Javeriana and Antioquia from Colombia, and Andes from Venezuela, libraries support journals by doing the data processing (preparation and markup) for SciELO. It is a process that uses markup language to prepare files for electronic publication by indicating elements (titles, authors, addresses, abstracts, body of a document, references with all their components, etc.) that will be used for internet search and analysis (SciELO, 2000). This activity of university libraries can be appreciated with the following quotation from the Universidad Austral de Chile,

ENG: Currently, the central library is in charge of library exchanges and the technology issues. They also support the journal. One of the technical processes to publish the journal in SciELO is done by the library. We have a very good relation with them and they do part of the technical work that we could not do because we would not have time. Also [the library develops] some of the relationships with other journals. The journal used to do everything; it was autonomous and independent. ... [Regarding] data processing for SciELO, there is a young man at the library even though we also markup [files].

SPA: *En este momento los canjes los hace la biblioteca central y todo el asunto tecnológico. Ellos colaboran también con la revista. Uno de los trámites técnicos que hay que hacer para colocarla en SciELO, lo hace la biblioteca. Tenemos muy buena relación con ellos, y hacen parte del trabajo técnico que nosotros no podíamos hacer porque no tendríamos tiempo. También [la biblioteca hace] una parte del trabajo de relaciones con otras revistas. Antes todo lo hacía la revista; era muy autónoma, muy independiente. ... [Con respecto a la] marcación para SciELO, hay un joven en la biblioteca aunque nosotros también marcamos.*

The main library of the Pontificia Universidad Javeriana supported the data processing of journals for SciELO for a short period of time due to the availability of some funding. Currently, there is a person at the library trained in the SciELO methodology who does the markup but it is at the expense of the journals and schools that fund them. The interviewee understands that this should be a function of the library, thus editors would not have to contract this service outside the institution that is expensive.

ENG: At that time [2008], the library decided to support what we were doing by providing journal markup services [for SciELO]. Because there are 22, we started with the journals that were in category C [in Publindex] and could be upgraded to B, or those in B and could be upgraded to A. Not those outside [of Publindex] because they had to meet at least the periodicity/frequency. ... They have a very important role with databases and markup. Data processing for SciELO stopped. ... They are only doing data processing for LiLACS and their own collections. ... I would like to give them all the responsibility of data processing.

SPA: *En esa época [2008], la biblioteca decidió prestar un servicio al trabajo que estábamos desarrollando, y era ellos marcar las revistas [para SciELO]. Como son 22, comenzamos con las revistas que estaban en C [de Publindex] y podían subir a B, o las que estaban en B y podían subir a A. No las que estaban por fuera [de Publindex] porque teníamos que pasar por la etapa de que al menos cumplieran con la periodicidad. ... Ellos tienen un rol muy importante en las bases de datos y las marcaciones. La marcación de revistas en SciELO no se siguió haciendo. ... Solo están haciendo marcación en LiLACS y la suya propia. Yo quisiera entregarles esto, todo el tema de las indexaciones, a ellos.*

In present times, with the development of ICTs and a variety of global, regional, and local bibliographic databases and indexes, libraries have gained new dimensions and roles. In

Latin America, one of the most influencing initiatives is SciELO, which uses a methodology for electronic publication and data analysis. To be in SciELO is an issue of prestige and visibility for journals. This methodology requires trained personnel and is expensive. Some university libraries in this study have assumed the responsibility of offering that service to the institutions' journals. As it was suggested in the previous quotation, data analysis and processing is not new to libraries since they do it for their own collections. The innovation is that there are new databases that require this type of services. SciELO is one of them as it is the PAHO Literatura Latinoamericana en Ciencias de la Salud (LiLACS), a regional index in health sciences that exists since 1979, first with the name of Latin American Index Medicus and later (1982) changed to LiLACS (BIREME, n. d.). The discussion should lead to respond whom should be in charge of these processes for university-based journals.

In other cases, **university libraries** are in charge of repositories specific for journals or more general for different kinds of documents. Universities in this study that have journal repositories are Universidad de Chile, Austral, Nacional de Colombia, and Zulia. This part uses data from the interviews and the search at the universities' websites. For instance, the Universidad Austral de Chile in Valdivia has a repository that is managed by the Virtual Library of the Library System UACH (<http://mingaonline.uach.cl/scielo.php>). This repository is unique among the group of universities included in this study because it is made following the SciELO methodology,

ENG: The Universidad Austral has something interesting within the SciELO network. ... They have a website called Minga Online and is done with the SciELO methodology. Minga used to be a transportation system to move whole houses. ... They adopted it after [CONICYT gave them] a workshop about the SciELO methodology. They made a local/institutional repository. That was a boom, even though there were some hesitant editors. Soon, months, they started to have more demand, more articles,

they have become more selective, they have internationalized. They could apply to ISI [Thomson Reuters] more easily.

SPA: La Universidad Austral tiene una cosa interesante dentro de la red SciELO. ... Tienen un sitio que se llama Minga Online y es hecho con la metodología SciELO. Minga era un sistema de transporte para mover casas completas. ... Ellos lo adoptaron después de que [CONICYT les dio] un taller sobre la metodología SciELO. Hicieron un repositorio local/institucional. Eso fue un boom, aunque algunos editores estaban reticentes. Al poco tiempo, meses, comenzaron a tener mayor demanda, mayor cantidad de artículos, se han vuelto más selectivos, se han internacionalizado. Podrían postular a ISI más fácilmente.

The previous quotation is also useful to start analyzing the importance of regional indexes like SciELO for Latin American journals and scholars/researchers. A first element is that journals become more prestigious from being in SciELO, which is translated into more manuscripts received for evaluation and publication. The second element is that more global indexes such as Thomson Reuters's indexes and Medline now include in their databases SciELO journals. A third element is that with an increased visibility and reputation, a journal/author/article also starts being more cited. This theme will be analyzed later in the document.

Reinforcing the idea of the complexity of the largest universities included in this study is the existence of repositories. Of those institutions, the Universidad de Chile has a portal for all the academic journals published by the university (<http://www.revistas.uchile.cl/>). That portal is managed by the Sistema de Servicios de Información y Bibliotecas (SISIB) [Information Service and Library System]. Some schools also have their own repositories of publications, such as the School of Social Sciences with eight journals (<http://www.facso.uchile.cl/publicaciones>), which was developed by the SISIB, the University Information Technology System, and the direction of communications of the School (FACSO). Another school that has a repository developed by

the SISIB is the School of Philosophy and Humanities that includes 16 titles (http://www.filosofia.uchile.cl/?_nfpb=true&_pageLabel=conUrl&url=44688).

In Colombia, the Sistema Nacional de Bibliotecas UN [National Library System UN] of the Universidad Nacional (<http://www.revistas.unal.edu.co/index.php/index/index>) manages the repository called Portal de Revistas UN that includes journals indexed by Publindex, SciELO, and those that meet the minimum criteria of quality. Currently, it includes 47 titles (<http://www.revistas.unal.edu.co/index.php/index/index>). Even though the Universidad Nacional is one of the complex universities identified in this study regarding governance and authority involvement in the development of journals, the existence of one institutional repository may show the leadership of the university library system or how the university has been able to develop policy and/or actions to support its journals.

In Venezuela, The Universidad del Zulia has a journal repository called Revistas Científicas y Humanísticas Revicyh LUZ that is developed by the Sistema de Servicios Bibliotecarios y de Información (Serbiluz) [Library and Information Service System] (<http://revistas.luz.edu.ve/revicyhluz/>). Serbiluz is a collaborative project between the Central Library “General Rafael Urdaneta” and the libraries of the schools. It includes 35 titles. On the other side, regardless its incipient development in electronic publication, the Universidad Andrés Bello has a journal repository that is managed by the library and includes digitalized versions of 12 journals (<http://www.ucab.edu.ve/revistas-digitalizadas.html>) (UCAB, n. d. b).

It is important to comment here that the Universidad de Los Andes in Mérida has a repository called Saber ULA. It is not managed by the university library but by Centro de Teleinformación and developed by the Parque Tecnológico de Mérida. Further description about this Saber ULA is provided later in the document.

In synthesis, two important actors in the development of journals published in universities, besides journal editors and sometimes university authorities, are university press units and libraries. It seems that press units are more involved in the publication of books than journals even though they provide technical support. One could think that press units could contribute to the development of journals in issues of management and strategic positioning. There are in this study a couple examples that could be reviewed in-depth in future projects. On the other side, university libraries are being re-dimensioned with the advances in ICTs. One way libraries can contribute to the growth of journals is with the development of journal repositories (this study provides interesting examples), and another is providing data processing services for inclusion of the journals in key bibliographic indexes like SciELO and LiLACS. Other possible actors that were barely mentioned in the interviews include **legal offices** and **ICT departments**.

4.2.3 Actors: journal editor

The third subcategory, *journal editors*, looks at different roles and characteristics that editors may have within the institutions. In the study, most interviewees agree that the role of the editor is crucial for a journal to succeed. Most of them also agree that this is an undervalued position. This is transversal to all the institutions in the three countries. A first factor affecting the work of an editor is a combination of the time and effort that is required to publish a journal and the payment in salary and/or bonuses for the editorial work. It varies between one university and another and even within the same institution. The following is the comment of one of the experts interviewed, who works with journal editors in Chile,

ENG: Editors are not paid or recognized. We have to support them. We have an editor who does everything and you have to see the quality of journal he publishes.

SPA: *Los editores no son remunerados ni reconocidos. Toca apoyarlos. Tenemos un editor que hace todo y vieras la calidad de la revista.*

The previous statement is confirmed by the concerns of a journal editor about salary and workload. In addition, the national system to recognize faculty productivity in Venezuela assigns a very low score for editorial work; the most important/valued products are publications and other products,

ENG: The [university] pays the salary, the name, and the location, but does not release the editor of work load or pays her/him the [editing/publishing] hours. [Institutional] statements declare the importance of editors but they do not get at least a bonus. Since the salaries are very low, we have to be doing research and publishing constantly in order to get the academic monetary bonus that is very small and that used to be paid quarterly and it is also delayed...

SPA: *La [universidad] paga el sueldo, el nombre, y el local, pero no libera carga o paga horas al editor. En las declaraciones [institucionales] se dice que los editores son muy importantes pero no se les da ni siquiera un bono. Como los salarios son tan bajos, tenemos que estar constantemente investigando y publicando para obtener el dinero del bono académico que es muy pequeño y que antes pagaban trimestralmente pero que también están atrasados...*

As it was stated above, some editors do not get payment for their work, they do it *ad honorem* or as part of their workload; however the hours are usually insufficient. At the Universidad de Los Andes in Venezuela, there was an attempt to assign work hours to the editors as part of their workload but it could not be achieved,

ENG: There is neither a salary bonus nor a workload release. In 2006, I tried to get that recognition [for the editors] at least a few hours, but I could not gain support for it. ... In this country, it [editorial work] is still a voluntary military service. I am a peer reviewer for the PPI commission. It is only marginally considered when the reviewer is going to ascend to the highest level of the ladder. That work is not valued where it is being evaluated but is highly recognized in the academic context. Rankings do not consider relevant the work of the editor. We value it but the score is very low, because when a person seeks to be included in the PPI, what counts is his/her production.

SAP: *No hay prima, no hay carga horaria. En el 2006, traté de buscar ese reconocimiento [para los editores] al menos de las horas, pero no logré el apoyo para esto. ... Todavía en el país sigue siendo [el trabajo del editor] un servicio militar voluntario. Soy evaluador de la comisión del PPI. Sólo se toma marginalmente cuando van a ascender al máximo nivel. ... Esa labor es poco valorada en donde se está evaluando pero es muy valorada en el medio académico. Los baremos no están hechos para darle un peso a la labor del editor. Nosotros los valoramos pero el puntaje es muy bajo, porque cuando una persona busca su clasificación en el PPI vale su producción.*

The journal editor is sometimes a full-time professor who is able to commit some hours of his/her work load to work on the journal. The following is an example from the Pontificia Universidad Católica de Chile,

ENG: The director of the journal has committed half of her workload [to the journal] and in the other half she teaches classes.

SPA: *La directora de la revista tiene destinada media jornada y en la otra media dicta clase.*

This is another example from the Universidad de Chile:

ENG: [To be an editor] is part of the academic work. It is an honor or symbolic value to be a journal editor. It is not a very specialized job in our school. [Editors] are usually full-time professors. Most professors [in our school] are full-time. They declare or assign in their work plan the number of hours they commit to the journals. The week workload is 44 hours.

SPA: *[El ser editor] forma parte del quehacer de la academia. Es el honor o valor simbólico de ser editor de revista. En la facultad no es un cargo muy especializado. Usualmente son profesores de tiempo completo o planta. La mayoría de los profesores [en la facultad] son de planta. Ellos declaran o pasan en su plan de trabajo el número de horas que le dedican a las revistas. La jornada semanal son 44 horas.*

And this is how it is managed at the Universidad del Valle in Colombia,

ENG: We have something very good in Univalle, the resolution No. 022 that allows a professor to be released from workload up to half time to work on research. That would include administrative activities related to research, which can be the case of journals. Even though there is not an explicit policy, this is something interesting.

SPA: *Nosotros tenemos algo bueno en Univalle y es la resolución 022 que permite a un profesor tener una descarga hasta de medio tiempo para dedicarse a la investigación. Ello incluiría actividades administrativas relacionadas con la investigación como puede ser el caso de las revistas. Aunque no hay una política explícita, esto es algo interesante.*

Often, that time allocation is not enough when it is compared with the duties that editors are responsible for and without considering their teaching, research, and administrative commitments. For instance, a journal editor from Universidad de Antioquia says,

ENG: The problem is that we have to add teaching mostly undergraduate classes. I am worried about the excessive time I have to spend with the undergraduate program, which I love but it is too much. We should have funding in order to not to have to do secretarial work.

SPA: *El problema es que debemos agregarle la docencia, sobre todo en el pregrado. Me preocupa la excesiva dedicación que tengo que darle al pregrado, que me fascina pero es mucho. Deberíamos tener apoyo financiero para no tener que hacer labores secretariales.*

In a few cases, when the journal has reached a high reputation and enjoys some financial leverage, a person is hired to work as a kind of assistant editor who is in charge of the technical processes. The next two examples support this idea. The following journal from the Universidad Católica de Chile has a director, an editor who is in charge of the technical procedures, and a secretary:

ENG: In 2001 [the journal] is included in ISI; it is the first journal of the Universidad Católica [de Chile] to enter. [The inclusion in] SciELO, I believe was in 1997. ... There is a shift in the focus and the journal is not anymore from the institute to have larger expectations. ... Currently, the director of the journal has half of her workload assigned to the journal and the other half is to teach classes. ... I am the editor [a kind of associate editor] and work 11 hours a week. And there is the secretary, that I believe is who does most of the work.

SPA: *En 2001 [la revista] entra a ISI; es la primera revista de la Universidad Católica [de Chile] que entra. A SciELO me parece que fue en 1997. ... Hay un cambio de enfoque y deja de ser la revista del instituto para tener expectativas mayores. ... Actualmente, la directora de la revista tiene destinada media jornada y en la otra media*

dicta clase. ... Yo soy la editora y trabajo 11 horas a la semana. Y la secretaria, que al final yo creo que es la que nos hace más de la mitad de la pega [trabajo].

The next journal in this description is from the Universidad Nacional de Colombia and has an editor and an associate editor who is in charge of the technical processes:

ENG: ... now we are visible in SciELO. Then, they [Publindex] reconsidered and upgraded our journals to category A2. ... We are now in ISI. ... There are two people in this journal, the editor and I [associate editor].

SPA: ... *ahora estamos visibles en SciELO. Entonces ellos [Publindex] reconsideraron y nos subieron a la categoría A2. ... Ya estamos en ISI. ... En esta revista hay dos personas, el editor y yo [editor asociado].*

Contrary to the above, when a journal is just starting or is not yet indexed and recognized by the academic community, the editor often does most of the work and it is *ad honorem*. That is the case of Universidad Católica Andrés Bello in Venezuela,

ENG: I do not have a secretary or an assistant. Sometimes I have one of my academic assistants to help me. I am an editor-secretary. ... The journal competes with my own projects. ... I try to work around three hours a week [on the journal] but it competes with my other duties. We all do it that way.

SPA: *No tengo secretaria o asistente. A veces uso alguno de mis asistentes académicos que me ayudan. Soy editor-secretario. ... La revista compite con mis proyectos. ... Trato de dedicarle unas tres horas a la semana [en la revista] pero compite con mis otras labores. Todos hacemos así.*

Many times, the name of the editor is attached to the journal. That means that the publication is the result more of an individual effort than a department or an institutional enterprise,

ENG: Editors are champions because they do everything. We have had cases in which the editor dropped out of the journal and it fell.

SPA: *Los editores son unos campeones, pues hacen todo. Hemos tenido casos en que el editor la suelta y las revistas se caen.*

Authorities of universities such as Zulia and Andes have recognized life-long contribution of journal editors in special events. For instance, the Universidad del Zulia did it at the 20th anniversary of foundation of the University Development Council,

ENG: [The work of editor] has not been recognized and we are worried about it. Some of them have been publishing journals for more than 20 years; they are institutions. Their permanence is an indicator of success. ... Next month we are going to recognize the editors at the 20th anniversary of foundation of CONDES (University Development Council). Many journals have more than 50 years, since 1959.

SPA: *No se le ha dado [reconocimiento a la labor del editor] y es una preocupación. ... Algunos llevan más de 20 años editando las revistas; son instituciones. Su permanencia es un índice de éxito. ... El siguiente mes, vamos a hacer un reconocimiento a los editores con la celebración de los 20 años del CONDES. Muchas revistas tienen casi 50 años, desde 1959.*

The Universidad de Los Andes recognizes article writers and editors. However, it seems that the former recognition is for single products while the latter is for milestones,

ENG: Besides the PPI, we [at the Universidad de Los Andes] have the Researcher Encouraging Program. ... Recognition to publish in journals, national not indexed, national indexed, [and] Latin American or international indexed journals. Publication in journals type A and B [in the national ranking] is under discussion for recognition in the scale. ... Recognition to article writers and editors... For instance, recently the Revista de la Facultad de Farmacia was recognized when it celebrated its 50th anniversary of foundation.

SPA: *Además del PPI, nosotros [en la Universidad de Los Andes] tenemos el Programa de Estímulo al Investigador. ... reconocimiento a publicar en revista no indexada nacional, indexada nacional, latinoamericana, o indexada internacional. La publicación en revistas A y B [del ranking nacional] está en discusión en el baremo sobre el reconocimiento. ... Reconocimientos a profesores articulistas y editores... Por ejemplo, recientemente se reconoció a la Revista de la Facultad de Farmacia que cumplió 50 años.*

In some universities such as Javeriana, Antioquia, and Valle in Colombia, and Andrés Bello and Central de Venezuela, editors complain about the growing demands to publish a journal, including indexation, journal management, and network development, without being

provided with the resources to achieve the goals and meet the demands. This is what the interviewee from a Colombian university said about this issue,

ENG: [In the] 1990s, [people started to realize] the amount of work and the workload that Publindex implies. Concerns of the university journal editors... [At the university] a “union” was created to fight issues such as workload and all the new trends.

SPA: *[En los] años noventa, [se comenzó a caer en la cuenta del] gran trabajo y carga laboral que implicaba Publindex. Preocupaciones de los editores de las universidades... [En la universidad] se creó un “sindicato” relacionado con asuntos como la carga laboral y todas las tendencias que se están dando.*

In summary, the role and work of the editor is deemed essential for a journal to be successful. However, the growing demands for a better management, the creation of networks of referees, authors, and readers, and the search of bibliographic databases and indexes to include a journal imply increasing workload for the editors. The number of people doing editorial labor ranges from the lonely editor who does most of the work to the editor who has a team to develop all the processes required by the publication. An editorial team could consist of an assistant editor and a secretary paid to work for the journal. Payment for the editorial labor also varies from the editor who does the work entirely ad honorem to that who works paid hours. In many cases, the editor can assign hours from her/his workload but they are often insufficient due to, as it was explained above, the increasing demands of the editorial processes. The responsibility of the editor is very high but the credit given to him/her at the national and institutional levels is low. Salary systems do not promote the editorial work either since they mostly recognize products such as publication in indexed journals but not who publishes those journals. Often, a journal is tied to an editor, which poses a risk for the continuity of the publication. If the editor leaves, the journal might fall because there are not incentives for the new generations of scholars

to do editorial work. Given the complex and increasing demands of the editorial work, editors should be professionals. This and other issues presented here are analyzed later in this document.

Figure 5 summarizes the issues mentioned that are associated with the work and role of the journal editor. It includes valuation, workload, existence of a journal management team, and salary. A call from professionalization of the journal editor work is highlighted.

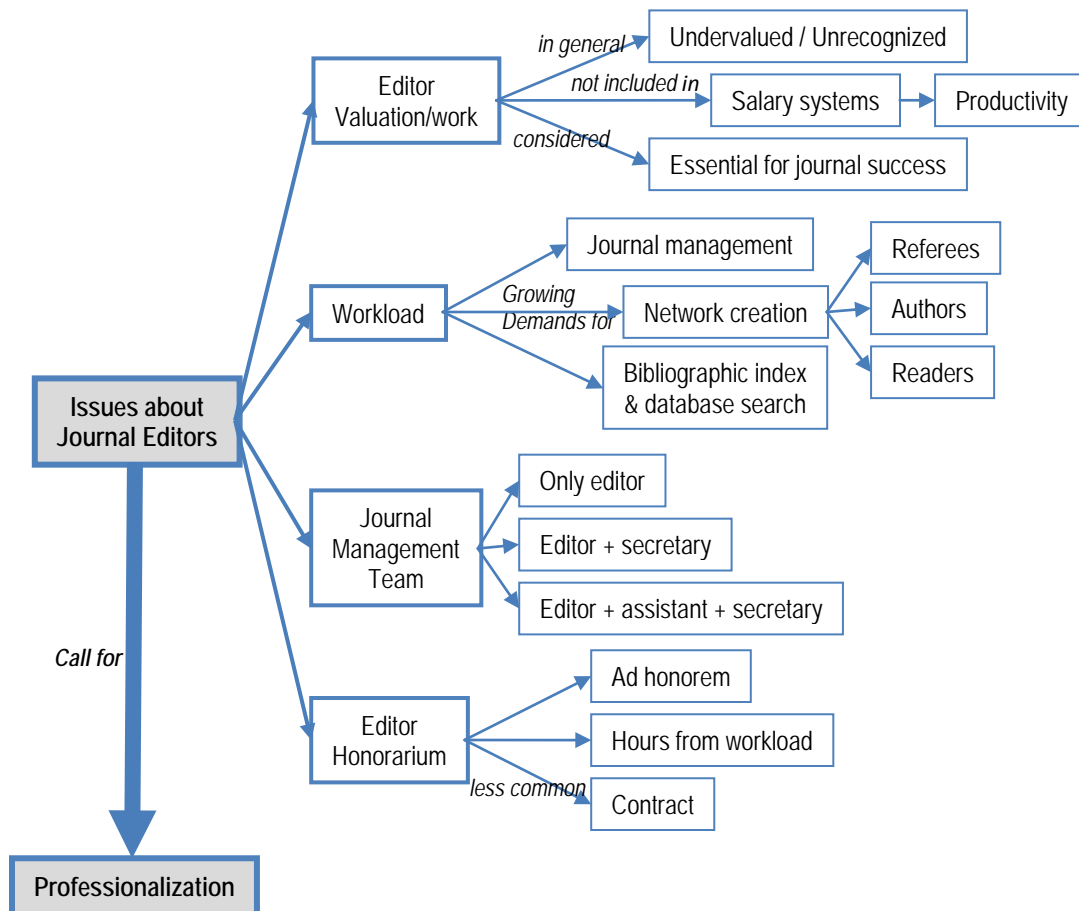


Figure 5. Factors associated with the work and role of the journal editor

4.2.4 Policies, strategies, and resources: university actions

The category *policy, strategies and resources* analyzes what universities are doing to provide the conditions necessary for the publication of journals. The first subcategory, *university actions*, describes the main actions taken by the university to support the journals.

At some universities in the study, some journals worked as triggers to call authorities' attention, to reinforce the idea of creating policies to support journals, or to facilitate the discussion of successful experiences (**journal models**). In each case, those journals were included in the national journal evaluation system, in the case of Colombia and Venezuela, as well as in prestigious regional (SciELO) and international (SCI, SSCI, and AHCI) indexes.

At the Pontificia Universidad Católica de Chile, *EURE*, a journal on regional urban studies, was the first publication of the institution to be accepted in the SSCI and one of the first to be included in SciELO. It increased the prestige of the academic unit (department and institute),

ENG: [The journal] was born in 1970. ... In 2001 [the journal] is accepted in ISI; it is the first journal of the Universidad Católica to be included there. I believe it was included in SciELO in 1997. ... It is the best journal on its topic in a language different from English. In the past, all the journals were from the United States, UK, the Netherlands, Australia ... There were two things that kept up the [Urban Regional Studies] Institute. One was EURE. The other was to enter mainstream science.

SPA: *Nació en 1970. ... En 2001 [la revista] entra a ISI; es la primera revista de la Universidad Católica que entra. A SciELO me parece que fue en 1997. ... Es la mejor revista en su tema en idioma diferente del inglés. Mejor indizada en ISI y Scopus. Antes todas eran revistas estadounidenses, inglesas, holandesas, australianas... Había dos cosas que mantenían el instituto [de estudios urbano-regionales] en pie. Uno era EURE. Lo otro era entrar a una corriente científica.*

The Universidad de Concepción in Chile provides full support to those journals that are included in the Thomson Reuters' indexes and SciELO. It is not possible to say from the interviews used for this study what happens to other journals published at the institution. The editor of the university's main journal, *Atenea*, is also the director of the university press unit, as it was described above. The following quotation shows the evolution of *Atenea* along with the country's history, since it is the oldest journal in Chile. Besides the influence of prestigious journals, it also shows how the university support of journals is framed by the trends in academic periodical publication that privileges scientific-like journals,

ENG: *Atenea* represents the whole university. It is the oldest journal in the country that was founded in 1924 and has been published without interruption, and it is the oldest [journal] in Latin America published without interruption. It was born with the university as a need to promote the development of science, arts, and literature. Rector Enrique Molina was its founder and first editor. It covers hard sciences, humanities, and artistic expression. ... The journal evolves between 1924 and 1960; it reaches the top of the most important journals because of its collaborators. There are several Nobel laureates, authors such as Joyce and others. In the decade of the 1970s, the journal starts to be more inclined towards the social movements of that time. Anthropological, historical, education studies... That trend ends in 1970 when it changes name. It was at the service of the Chilean revolution. The coup ended that line. The political line was not strong but tempered by the academic [character]. It did not become political; it just chose authors who seemed more appropriate to the fight. ... Back to democracy and with the first elected rector, the direction of the journal changed. At that time, 1994, I became the editor. I started to do some transformations that consisted of beginning an accreditation process in order to get it included in some important indexes. I tried to adapt the journal. Then in 1997, we signed an agreement with Thomson Corporation that had not purchased ISI yet. We entered SciELO in 2003. In 2008, we entered ISI. ... From the beginning, the journal was international and received articles from abroad. Until the 1950s, the journal had a cultural character. Later it was a cultural critique journal in the 1970s. Today it is a scientific journal. ... The university press unit was born in 2000. Before, there was a sub direction of university publications. The creation of the press unit implies the creation of a policy.

SPA: *Atenea* representa toda la universidad. Es la revista más antigua del país que se fundó en 1924 y se ha publicado sin interrupción, y la más antigua de América Latina publicada sin interrupción. Nace casi junto con la universidad, como una necesidad, para impulsar el desarrollo de la ciencia, las artes, la literatura. El rector Enrique Molina fue el fundador y primer editor. Abarca las ciencias duras, humanas y la expresión artística. ... La revista se desarrolla entre 1924 y 1960; alcanza su

culminación como una de las revistas más importantes por sus colaboradores. Están varios premios Nobel como colaboradores, autores como Joyce y otros. En la década del sesenta la revista empieza a inclinarse un poco a los movimientos sociales de la época. Estudios antropológicos, históricos, educacionales... Culmina en 1970 esta tendencia cuando cambia de nombre. Estaba al servicio de la revolución chilena. El golpe militar terminó con esta línea. La línea política no era fuerte sino matizada por lo académico. No se politizó, solo eligió autores que parecían más propios de la lucha. ... Con la vuelta a la democracia y el primer rector elegido, cambia la dirección de la revista. En ese entonces, 1994, yo me hago cargo de la revista. Empecé a efectuar algunas transformaciones, que en el fondo consistían en iniciar un proceso de acreditación para poderla inscribir en algunos índices importantes. Entonces traté de adecuar la revista. Entonces en 1998, nosotros conseguimos un convenio con la Thomson Corporation que todavía no había comprado a ISI. Entramos a SciELO en 2003. En 2008 entramos a ISI. ... Desde un principio la revista era internacional y recibía artículos de afuera. Hasta los años cincuenta la revista tenía un carácter cultural. Después fue una revista de crítica cultural hasta los años setenta. Hoy es una revista científica. ... El sello editorial de la universidad nació en el año 2000. Anteriormente existía una subdirección de publicaciones de la universidad. La creación del sello implica la creación de una política.

The Universidad Austral de Chile has two journals that have inspired the authorities to support the development of such publications. They are *Archivos de Medicina Veterinaria* and *Estudios Filológicos*. Both have different history and organization. *Archivos de Medicina Veterinaria* was one of the first Chilean journals included in SCI and SciELO, as well as Pubmed/Medline, the most important index in biomedical sciences worldwide. The following fragment of interview introduces two new themes in the study of journals, the importance of a journal within an academic unit and the language of publication. Both themes will be explored in more detail later in the document,

ENG: The journal belongs to the School of Veterinary Sciences. It was founded in 1969. It is important because many of the scholars/researchers have been in the editorial committee. It publishes scientific research studies in the field of veterinary medicine. It is not aimed at practitioners. ... It is in ISI and Pubmed. It entered in 1983, before the theme became popular now as well as the theme of publishing in English. ... It is in SciELO since 1993. It has also been a pioneer in that database.

SPA: *La revista pertenece a la facultad de ciencias veterinarias. Fue fundada en 1969. Es importante porque muchos de los académicos han pasado por el comité editor.*

Publica trabajos de investigación científica en el campo de la medicina veterinaria. No está dirigida a los que hacen trabajo de campo. ... Está en ISI y en Pubmed. Entró en 1983, antes de que el tema se volviera popular ahora lo mismo que el tema de [la publicación en] inglés. ... Está en SciELO desde 1993. También ha sido pionera en esta base de datos.

The other distinguished journal from the Universidad Austral de Chile is Estudios Filológicos. This journal was the first one from this university to be included in the Thomson Reuters' indexes. Given its reputation, this journal, along with the veterinary journal, collaborated with CONICYT in the creation of SciELO Chile. The influence of both journals can be seen at two levels: other journals that follow their models and the university administration that recognized their prestige and supports them to continue improving. There are also three aspects to be highlighted from this quotation: how a journal has passed through the political history of the country; how the government agency for S&T has developed strategies and initiatives to promote journals; and the names of key individual actors in the Latin American/international scene of journal publication. In this case, Ana María Pratt from CONICYT is the person who started to develop the programs to promote journals in Chile (Pratt, 2001), and Abel Packer, the creator of SciELO in Brazil (Packer et al., 2001),

ENG: This school of arts and education, or philosophy and humanities, as it is called nowadays, started with studies on Spanish language and literature. A famous dean, Doctor Eleazar Huerta, created the journal that is the university oldest. It had a fast and unexpected development because there were not indexations or accreditations at that time; it had many authors from abroad. It never stopped even in 1974; it was not intervened ... I have been the editor for a long time. We [I] do it as a vocation, there is not assignation. We used to have a secretary who got ill and has not been replaced. ... The first thing we learned was that it could be included in indexes; a British professor told us that we could get it included in ISI, and we had to learn what it was about. ISI accepted us immediately. ... Later in Chile, the person in charge from CONICYT, Ana María Pratt, had the idea of a national index. She met a Brazilian man who had the same idea and created the famous SciELO. She needed to ask for help to the oldest Chilean journal in those topics and that was in ISI [Estudios Filológicos], as well as the veterinary journal. Hence, we started collaborating in the development of SciELO Chile, doing collective work. ... Both journals, Philology and Veterinary, started working on their

own and later the university recognized them. There are other journals that have followed our models. Of course, when the university realized it had two ISI journals, it started worrying a little bit more and providing support. ... The central administration focuses on supporting what is already there and helping it to continue improving. Sometimes they support what emerges from the perspective of the director of research.

SPA: Esta facultad letras y educación, o filosofía y humanidades, como se llama ahora, comenzó con los estudios de lengua y literatura castellana. El doctor Eleazar Huerta, un famoso decano, creó la revista que es la más antigua de la universidad. Tuvo un desarrollo rápido e inesperado porque en ese tiempo no existían indexaciones o acreditaciones; tenía muchos autores del extranjero. Nunca se detuvo ni siquiera en el año 1974, ni fue intervenida. ... Yo he estado [como editor] por mucho tiempo. Lo hacemos de manera vocacional, no hay asignación. Solíamos tener un secretario técnico que se enfermó y no se ha remplazado. ... Lo primero que aprendimos era que se podía colocar en índices; un profesor británico nos dijo que por qué no la poníamos en ISI, y tuvimos que aprender que era eso. Nos aceptó ISI inmediatamente. ... Posteriormente en Chile, una persona encargada de CONICYT, Ana María Prat, tenía una idea de un índice propio. Ella conoció a un señor brasilero que tenía la misma idea, y creó el famoso SciELO. Ella necesitaba pedir ayuda a la revista más antigua de Chile en estos temas y que estaba en ISI, así como la revista de veterinaria. Entonces nosotros comenzamos a colaborar en el desarrollo de SciELO en Chile, a hacer un trabajo conjunto. ... Las dos revistas de filología y veterinaria, comenzaron trabajando por su cuenta y después la universidad las ha reconocido. Hay muchas otras revistas que han seguido nuestros modelos. ... Claro, cuando la universidad se dio cuenta que tenía dos revistas ISI, empezó a preocuparse un poco más y empezó a hacer apoyo... El nivel central se preocupa por estimular lo que hay y apoyarlo para que siga mejorando. A veces apoyan lo que surge desde la opinión del director de investigaciones.

As it was described before, the Pontificia Universidad Javeriana has several journals well-positioned in national and international indexes. Editors of two of those journals, *Universitas Psychologica* and *Cuadernos de Administración*, have worked with the university press unit journal coordinator to discuss with university authorities and school deans the trends in journal publication in the country and globally, the demands and challenges journals face, and what is necessary to do in order to publish high quality journals. Since its foundation in 1981, *Cuadernos de Administración* has undergone different changes in orientation and publication lapses. Currently, as part of the trend that started in the 1990s, the journal has consolidated as a scientific transdisciplinary publication where several disciplines in the business and

administration field converge (<http://cuadernosadministracion.javeriana.edu.co/historia.htm>). On the other side, Universitas Psychologica was created in 2001. Its founder was the previous editor of another Latin American journal in the field of psychology. This journal has consolidated and gained prestige in a short period due to the strategic work and clear goals set from its creation (López-López, 2011).

The Universidad Nacional de Colombia also has several journals that have gained national and international presence and recognition. One of the journals, *Revista de Salud Pública*, is important because its editor was the person who negotiated with SciELO Brazil and Colciencias to manage the portal SciELO Colombia from the Institute of Public Health in that university. Once the management of SciELO Colombia passed from the PAHO office in Colombia to the Universidad Nacional, the institution has developed strategies to improve its own journals and have them included in SciELO.

ENG: There were many interesting and publishable master's theses. [Dr. Carlos Agudelo] had the idea of creating a journal. ... The journal has advanced quickly and with quality. They started with three issues and currently we publish five issues a year. It allowed the journal enter Medline and therefore it entered SciELO Public Health. Currently, SciELO Colombia depends on the Institute of Public Health. ... Dr. Agudelo is recognized in Brazil because of the journal and several projects he has carried out with the Oswaldo Fiocruz Foundation. He started to inquire at BIREME with Abel Packer why SciELO Colombia was not working and there were only four journals doing the markup but wrong. ... There is support [from the university] for journals that are in SciELO. The SciELO team that works here does journal markup. It consists of five people plus Drs. Agudelo and Prieto. ... Since SciELO was a boom, the university is working on creating a policy for journals. ... When [the management of SciELO] was transferred to the university, the number of journals started to increase because, first, the university began to support its own journals. Later, an agreement with Colciencias was signed to include the journals that advanced in the process of achieving editorial quality. Those were the journals that were in category B.

SPA: *Había muchas tesis de maestría muy interesantes y que se podían publicar. [El doctor Agudelo] tuvo la idea de crear una revista. ... La revista ha avanzado con mucha calidad y rápidamente. Comenzaron con tres revistas y actualmente se publican cinco números al año. Esto le permitió a la revista entrar al Medline y por esto entró a SciELO salud pública de Brasil. Actualmente, SciELO Colombia depende del Instituto de*

Salud Pública. ... El doctor Agudelo es muy reconocido en Brasil por la revista y por muchos proyectos que él ha trabajado con la [Fundación Oswaldo] Fiocruz. El comenzó a hacer la gestión en BIREME con Abel Packer de por qué SciELO en Colombia no estaba funcionando y que solo estaban four revistas que estaban haciendo el proceso de marcación pero lo estaban haciendo mal. ... Sí hay un apoyo [en la universidad] para las revistas que están en SciELO. El grupo de SciELO que está acá marca las revistas. Son cinco personas más los doctores Agudelo y Prieto. ... Como SciELO fue un boom en la universidad, sí se está buscando [crear una política de apoyo a las revistas]. ... Cuando [SciELO] pasó para la universidad, comenzó a incrementarse el número de revistas primero porque la universidad empezó a apoyar sus revistas. Se hizo después un convenio con Colciencias para incluir las revistas que ya hubieran avanzado en el proceso de alcanzar calidad editorial. Esas eran las revistas que estaban clasificadas en B.

This process has not passed without trouble. Some universities saw how journals from the Universidad Nacional were quickly included in SciELO, and considered it unequal competition. Important here is to start understanding how politics, competition among universities, and specific interests are part of the publication of journals in Colombia. The fact that the Universidad Nacional made a move to have its journals in SciELO and ascend to the highest category in Publindex could be understood as a way to improve the score that professors from public universities get for publications. This is translated into higher salaries. In the words of one of the interviewees,

ENG: They [the managers of SciELO Colombia] made a move to have all their journals published [in SciELO]. They signed an agreement with Colciencias to include only the journals that ascended to category B. Then, they did the markup and published their journals to ascend to category A. That happened in 2006, and those who were in category C could not do the markup. That caused trouble to us because journals from the Universidad Nacional quickly appeared with very high indicators, but the rest of the journals were left out. [A university sent] a letter to Colciencias to make public the problem with the agreement, whose document disappeared.

SPA: *Ellos [los administradores de SciELO Colombia] hicieron una jugada para que quedaran todas las revistas de ellos montadas. Ellos hicieron un convenio con Colciencias para que quedaran solo las revistas que ingresaban en categoría B. Entonces marcaron y subieron todas sus revistas para luego subir a categoría A. Eso sucedió en el 2006, y los que estábamos en categoría C no podíamos marcar. Nos generó problemas porque rápidamente las revistas de la Universidad Nacional aparecían con*

unos indicadores muy altos, pero las demás revistas quedamos por fuera. [Una universidad envió] carta a Colciencias e hizo público el problema del convenio, cuyo documento desapareció.

In Cali Colombia, the Universidad del Valle has three journals in the top categories of Publindex (A1 and A2). They are publications in different disciplines, such as engineering (*Ingeniería y Competitividad*) and Philosophy (*Praxis Philosophica*). *Ingeniería y Competitividad* was founded in 1997 and is indexed by Chemical Abstracts, Fuente Académica, and INSPEC. *Praxis Philosophica* was founded in 1977 and is indexed by SciELO and the Philosopher's Index. The journal in the highest rank is *Colombia Médica*. Originally founded as *Acta Médica del Valle* in 1970, the journal changed to its current name in 1980. *Colombia Médica* is included in some of the most prestigious regional and international indexes such as SCI, Scopus, SciELO and LiLACS (León-Sarmiento, 2008). It is not in the Medline. Besides the variety of disciplines covered by these and other journals from the Universidad del Valle, there are two things to comment on here. First, only one journal is indexed by Thomson Reuters, *Colombia Médica*; the other two are included in the main indexes specific to their disciplines, such as Chemical Abstracts and the Philosopher's Index. Until now, the findings have shown the Thomson Reuters' WoS (SCI, SSCI, and AHCI) as the most important indexes worldwide. For some disciplines is more important to be where their academic community and peers are. Publindex recognizes that in its evaluation of journals. The second comment is about the dates of foundation of the journals. *Praxis Philosophica* and *Colombia Médica* were founded in the 1970s, while *Ingeniería y Competitividad* was founded in the late 1990s. These could show two different moments in the development of publications at the Universidad del Valle; the first two journals represent tradition and have served as models within the institution, and the second is a

young journal that has appeared during the time of increasing interest in journal publication in Colombia.

Until now, journals that have had served, to some degree, as triggers or models for the development of policy at the university (Austral, Concepción, and Javeriana) and academic unit levels (Católica de Chile and Nacional de Colombia) have been analyzed. However, most of the universities in this study are complex institutions with important research traditions, large number of disciplines covered, and different levels of program offerings. There may be some journals that are highly valued within the institutions but the production is large enough and has such a high quality that is difficult to identify just one or two outstanding publications. In those cases, not one but all publications have generated the need for institutional policies. That issue appeared during the interviews with informants from the universities: Católica de Chile, Javeriana, Nacional de Colombia, Antioquia, and Central de Venezuela. For instance, the number of journals from Pontificia Universidad Javeriana grew enough to create the need for a journal coordinator to support the technical processes and work strategically to position the journals nationally and internationally. The universities of Zulia and Los Andes in Venezuela have the directors of the councils for scientific and humanistic development and their staff leading the processes to position their journals. The University del Zulia has worked to include seven of its 28 journals in the WoS. On the other side, the Universidad de los Andes created its own institutional repository including journals (SaberULA) and manages the national journal repository (REVENCYT) guaranteeing the visibility of its journals. The Universidad Austral, not only was inspired by its main two journals but created a repository based on the SciELO methodology.

Moving to another theme in the category of *university actions* carried out to support journals, the findings show that at one point universities have made **inventories and diagnostic evaluations** of journals. According to the interviewees and review of some websites, the Pontificia Universidad Católica de Chile, Universidad de Concepción, Pontificia Universidad Javeriana, and Universidad Nacional de Colombia (May, 2011) have conducted journal inventories and diagnostic evaluations. Some universities estimated the costs of creating special funds for journals, which is described later in the document.

As it was mentioned before, the Pontificia Universidad Católica de Chile Division of Communications carried out an inventory of journals when authorities realized that the institution has many journals and there were not standards. That office is in charge of journals in issues such as establishing formal standards and funding but editors are responsible and autonomous to run their publications,

ENG: Interviewee 1. The Division of Communications of the office of the Vice Rector realized that the university had many journals and there were not standards of publication. They gathered information from all the schools and Communications created an area to be in charge of journals. They made a study of the journals [and] the standards for publication. They created a competitive fund. Interviewee 2. The University establishes the standards but we are in charge of everything. Standards such as the logo, stylistic standards, its size [university logo] in relation to the logo of the institute... The most important are the standards of the indexation services.

SPA: Entrevistado 1. [En] la dirección de comunicaciones de vicerrectoría de la universidad se dieron cuenta que la universidad tenía muchas revistas y que no había una línea. Reunieron información de todas las facultades y comunicaciones creó un área que se hace cargo de todas las revistas. Hicieron un estudio de las revistas, de las formas que deben enmarcarse dentro de los lineamientos. Crearon un fondo concursable. Entrevistado 2. La universidad pone ciertas normas pero nosotros nos encargamos de todo. Normas como el tema del logo, hay normas de estilo, como su tamaño en relación con el logo del instituto... Lo que pesa más son las normas de los indizadores.

The Universidad de Concepción press unit supports mostly those journals that are in the main indexes like WoS and SciELO. However, they develop workshops with editors and experts

from CONICYT in order to have a diagnosis of the journals at the University and explore possibilities to help those who are behind,

ENG: ...we are going to have a symposium with the editors of indexed and not indexed journals, in presence of Marcela Aguirre [CONICYT]. The topics are to share experiences and to see the possibility of helping the journals that are not indexed to get their indexation.

SPA: ...*vamos a hacer un simposio con los editores de las revistas indexadas o no, con la presencia de Marcela Aguirre. Los temas son compartir experiencias y ver las posibilidades de ayudar a las revistas que no están indexadas para que lo logren.*

The coordinator of journals at the Pontificia Universidad Javeriana started her job conducting a needs evaluation through a survey and meetings with deans and editors, and the writing of a report.

ENG: First step: during the first weeks, it was a diagnostic report and planning; I met with all the deans and with all the journal editors; I conducted a survey and a project to learn about the needs (editors to the couch). That was shock therapy.

SPA: *Primera etapa: en las primeras semanas fue un informe diagnóstico y planeación; para eso me reuní con todos los decanos y con todos los editores de las revistas; hice una encuesta y un trabajo para conocer las necesidades (editores al diván). Eso fue terapia de choque.*

In May 11 2011, the office of the Vice Rector for Research of the Universidad Nacional de Colombia organized a workshop called “Taller Nacional de Fortalecimiento de Revistas Científicas de la Universidad Nacional de Colombia” [National Workshop for the Strengthening of the National University of Colombia Scientific Journals]. The event included presentations on a diagnosis of the scientific journals of the university, the normative framework for editorial processes at the university (Restrepo, 2011), the university journal repository, SciELO, and Publindex. There were also roundtables on journal operation and sustainability, journal

management, and mechanisms to position and qualify the university's production (<http://www.viceinvestigacion.unal.edu.co/VRI/>).

Besides initial evaluations, it could be expected that institutions conducted **follow-up and performance evaluations**. Among the universities of this study, only the interviewee from the Universidad de Los Andes mentioned follow-up evaluations,

ENG: The editors have to present a report showing the journal performance of the previous year. Here the movement of journals regarding their academic and administrative aspects is presented. That is what I try to emphasize in our workshops. ... Later, we have the evaluation of the CDCHT. Here I do my work of classification. I look at if the journal ascended in category [in the FONACIT ranking] and write a summary for each journal, where it was distinguished, or the corrective action they have started, for the application of the norms.

SPA: *Los editores tienen que presentar un informe que muestra el rendimiento de las revistas correspondiente al año anterior. Aquí se refleja el movimiento de las revistas en los aspectos académicos y administrativos. Es lo que trato de enfatizar en las jornadas. ... Luego tenemos la parte de la evaluación del CDCHT. Aquí hago mi trabajito de clasificación. [Miro] si la revista elevó su clasificación [en el índice de FONACIT] y hago un resumen según cada título, dónde se distinguió o los correctivos que han hecho, para la aplicación de la normativa.*

In short, universities may conduct diagnostic and performance evaluations of journals. Diagnostics can take place at any time when the institution decides to find out what is happening with its publications. Decisions made after initial evaluations may range from establishing a few standards to a complete set of strategies for the development of the journals. Even though it was mentioned in a few interviews, it is possible that all the universities in this study carried out some kind of inventories and diagnostic evaluations, since they provide funding for journals and that requires cost and budget estimates. Likewise, follow-up and performance evaluations allow authorities to gather data about the publications and their performance in a period of time. In some cases (Universidad Austral, Católica de Chile), journal teams are completely autonomous

and authorities only participate in the provision of funding. The only expectations are to maintain the quality and to meet the standards,

ENG: [We are] very autonomous. The requirements of the vice rector are related to formal aspects (university logo, way to write institutional affiliation, etc.) and, of course, meeting the ISI standards (time of publication, peer-review process, etc.).

SPA: *[Tenemos] bastante [autonomía]. Las disposiciones exigidas por la Vicerrectoría se vinculan principalmente a cuestiones formales (logo de la Universidad, manera de mencionar filiación, etc.) y por supuesto al cumplimiento de los estándares ISI (puntualidad, arbitraje, etc.)*

Another important step to develop journals and journal publication capacities has been **training provision** or exposure to the current demands for publications. This is also a phenomenon transversal to universities in the three countries at different levels within the institutions. Universities have invited different kinds of experts to provide workshops: international indexes (Thomson Reuters-WoS, Elsevier-Scopus), regional indexes and databases (Universidad Autónoma del Estado de México's RedALyC, BIREME/FAPeSP's SciELO, Universidad Nacional Autónoma de México's Latindex), national authorities (SciELO chapter of each country, Chile-CONICYT, Colombia-Colciencias), institutional experts (from schools of library science), international experts, and even editors of successful journals. Some of the words used to describe the goals of workshops and other training include sensibilization and professionalization of journal editors.

The following excerpt from the interview with the informant from the Pontificia Universidad Javeriana shows how the institution has offered trainings with experts in different levels. Since one of the main interests is journal indexation and inclusion in databases, they brought some of the main players from Thomson Reuters, Elsevier, and SciELO. They also had

activities with the people of the Public Knowledge Project to talk about its software and journal management system, Open Journal System. At that time, the university was deciding which software acquiring to publish the journals online. An additional activity, as it was mentioned above, was a meeting with the editor of one of the most successful journals from the university to serve as a model so the editors would learn what they have to do and what the challenges ahead are to position the journals internationally. The names of other key actors appear in this interview such as the people from PKP (Gustavo Fischman and Juan Pablo Alperín) and Scopus (Felix de Moya). In addition, it is interesting to notice here how in journal editors and universities are working in collaboration to promote the development of journals in Colombia,

ENG: A next step is the sensibilization of editors through different activities. We have invited RedALyC and ISI Thomson, even though the [Thomson Reuters'] experts never come, only the sales representatives. I asked James Testa to give us a talk on how to write ISI articles. He is the person who receives the journals (vice president) and develops relationships with publishers. I wanted him to give it; he came to sign an agreement with Colciencias to create a consortium and introduce ISI to Colombia. They sell the database. We organized the ISI event taking advantage that he was in Colombia to tell us how journals can enter ISI. ... We brought the people from ISI but they focused on selling us the database. ... [After that] interesting things happened like the editors started to come not only to talk about their problems and needs, because they already have had catharsis, but to look proactively what they had to do and organize work meetings. ... In October we had the people from SciELO because we needed those ideas resounding in the editors' minds. The director of SciELO Abel Packer and his assistant Solange [María dos Santos], who is in charge of operative procedures, were here. ... We also invited Scopus from the Netherlands. There is a Spanish gentleman [Felix de Moya] who develops the map of science, which is beautiful because it shows interdisciplinary nodes of how sciences relate to each other. The Spanish are already working on the atlas of science with the people of Scopus from the Netherlands. We had that event in September and closed the year with the editors. ... We had before the training with PKP and OJS [Gustavo Fischman and Juan Pablo Alperín]. We had that event in collaboration with the Universidad de la Sabana, the Universidad Nacional, and Colciencias. ... In January we had a little meeting with the editors and Wilson López [editor of Universitas Psychologica] in order to learn about what he did and what the requirements are.

SPA: *Una siguiente etapa es la sensibilización de editores con diferentes actividades. Hemos invitado a RedALyC e ISI Thomson, aunque nunca vienen lo académicos sino los representantes comerciales [de Thomson Reuters]. Le pedí a James Testa una charla sobre cómo hacer artículos ISI. Él es el que recibe las revistas*

(vicepresidente) y desarrolla relaciones con las casas editoriales. ... Yo quería que él lo dictara; vino para firmar un convenio con Colciencias para crear un consorcio y entrar ISI a Colombia. Ellos venden la base de datos. Organizamos entonces el evento ISI aprovechando que él estaba en Colombia para que nos hablara cómo las revistas pueden ingresar a ISI. ... Trajimos a la gente de ISI pero se centraron en vendernos la base de datos. ... [Después de eso] pasaron cosas interesantes como que los editores comenzaron a acercarse no solo a hablar sobre los problemas y sus necesidades, porque ya habían hecho catarsis, sino mirando proactivamente qué cosas tenían que hacer y organizar reuniones de trabajo. ... En octubre tuvimos a la gente de SciELO, pues necesitábamos que le quedaran sonando las ideas a los editores. Estuvieron el director Abel Packer y su asistente Solange [María dos Santos] quien se encarga de toda la parte operativa. ... También invitamos a Scopus de Holanda. Hay un señor de España [Félix de Moya] que trabaja el atlas de la ciencia; es muy hermoso porque muestra los nodos interdisciplinarios de cómo se relacionan las ciencias. Los españoles ya están trabajando el atlas de la ciencia con la gente de Scopus de Holanda. Ese evento lo tuvimos en septiembre y cerramos el año con los editores. ... Antes tuvimos la capacitación de PKP y OJS [Gustavo Fischman y Juan Pablo Alperín]. Ese evento lo hicimos en conjunto con la Sabana, la Nacional y Colciencias. ... En enero hicimos una pequeña reunión con editores y Wilson López [editor of Universitas Psychologica] para aprender qué había hecho él y cuáles eran las necesidades.

Some universities also provide training with the experts from the countries' S&T agencies. For instance, one interviewee from the Universidad Austral talks about it,

ENG: ...the only big policy of the university is to provide financial support but letting the journals develop freely. [The university] accompanies, recommends, trains. A few weeks ago, they brought the people from CONICYT to train us.

SPA: ...*la única gran política de la universidad es apoyar económicamente, pero dejando a las revistas desarrollarse libremente. Acompaña, sugiere, capacita. Hace unas semanas trajeron a la gente de CONICYT para capacitarnos.*

The need for the professionalization of the work of the editor has been recurring throughout the interviews for this study on journals. Some interviewed editors see the training activities that the universities organize with and for them as a way to becoming professional editors. For instance, a journal editor interviewed at the Universidad de Concepción says, “*los editores con ayuda del sello editorial nos estamos profesionalizando*” [The editors with the help of the university press unit are becoming professionals]. Journal editors are scholars; they are not

trained to be editors. The following interview fragment with the informant from the Universidad de Chile shows it,

ENG: Scholars are scholars. We are not trained to be journal editors. There is knowledge on what the editorial/publishing sphere means in particular to be an editor that we usually do not know. I have realized that journal editors do not have that knowledge either.

SPA: *Los académicos somos académicos. No nos formamos para ser editores de revistas. Hay un tema de conocimiento de lo que significa el ámbito editorial, en particular el editorial científico, que nosotros muchas veces desconocemos. Yo me he dado cuenta que los editores de las revistas también no tienen ese conocimiento.*

In summary, this section has described the actions that universities have carried out to develop their journals. One of the findings is that some universities decide to support journals when there already are prestigious publications that inspire and serve as models for other journals in the institution; when the number of journals is high and it is necessary to make decisions about them; or due to the international/national trends in journal publication. Universities can also decide to give the same support to all their journals or to privilege the best positioned in the national and international indexation systems. To be positioned in international bibliographic indexes is frequently seen as a synonym of prestige and quality. The indexes considered gold standards are those included in the Thomson Reuters' WoS and, at the regional level, SciELO. For the journals from several disciplines it is more important, though, to be indexed by those services specialized in their fields. However, the WoS and SciELO, and in less proportion Scopus and RedALyC, are the indexes used as reference to make decisions and take action. University actions also range from more to less intervention to develop journals. Journal editors are autonomous and actions are taken to support their publications. University actions often start with journal inventories and diagnostic evaluations, which are used to make initial

actions like creating funding systems. It is important to emphasize here that very often editors do not have training or knowledge in journal publishing. In most cases, different kinds of training are provided by the institutions, which are appreciated by the editors. There is a call for the professionalization of journal editors. Finally, universities that create a system to work with journals and editors, include annual follow-up reports to evaluate performance. In addition to the aforementioned actions, universities have carried out other actions to support their journals, including development of journal repositories, journal funding systems, and publication standards (Universidad Católica de Chile and Universidad del Valle). The last ones will be analyzed later in the document.

4.2.5 Policies, strategies, and resources: publication formats

The second subcategory, *publication formats*, identifies the balance between print and electronic publication, use of OA, platforms used for electronic publishing, and if journals are reachable and/or available from the university website/repository.

In general, there is a transition from print to **electronic publication** in most universities. This is evidenced by the decrease in the circulation of print journals through subscriptions and sales. Print copies tend to be limited to library exchanges and a few remaining subscribers. Some people still like to have journal copies in their bookshelves. An interviewee commented, “*Tratamos de apoyar la publicación electrónica pero hay gente que se resiste y prefiere la revista impresa. Es un asunto de cultura*” [We try to promote the electronic publication but there are people who resist and prefer a print journal. It is a matter of culture]. Currently, journals’ print circulation can be as low as 200-500 copies by issue, having dropped from 1000 and even 2000. Reasons given to the migration from print to electronic format are reduction of publishing

costs, potential to reach wider audiences, and elimination of problematic processes like commercialization and distribution. The following is the opinion of an informant from Venezuela,

ENG: I believe the trend is to go to the electronic format; there will only be some copies to send to libraries, associations, and indexes. This is going to change the way we see the journals. ... Advantages of the electronic format: gives visibility because the physical [copy] is only read by the peers and areas where a journal is distributed, by exchange or subscription. It limits journals to a specialized circle. ... There is also a budget factor: disappearing [journal] funding, electronic publication can lower costs.

SPA: *Creo que la tendencia es ir al formato electrónico de las revistas; solo quedarán algunos ejemplares para enviar a bibliotecas, academias e índices. Ello nos lleva a cambiar la forma como vemos las revistas. ... Ventaja del formato electrónico: permite visibilidad, porque el físico solo lo leen los pares y las áreas donde se divulga la revista, por canje y suscripción. Limita las revistas a un círculo especializado. ... También hay el factor presupuestal: cayendo el financiamiento [de las revistas], la publicación electrónica puede bajar los costos.*

Regardless this trend, there is still some reluctance mostly in the humanities about the disappearance of print publication. The following comments by the editor of a journal in the humanities show that hesitancy to completely migrate to the electronic format. However, that journal, for different reasons has also decreased its circulation,

ENG: It was always a paper journal and keeps being that way. For us, the electronic [publication] is a complement. We used to publish 2000, later descended to 1000 and currently we lowered to 400. There is a problem of costs and a problem of happenings. We had a strong crisis at one point because a person got sick and we lost all the distribution system to libraries and individuals that we had. All the sales that we used to have... We realized that the problem was not new. We were losing many journals, many issues, [and] a lot of information.

SPA: *Siempre fue una revista de papel y sigue siéndolo. Para nosotros la [publicación] electrónica es un complemento. Solíamos sacar 2000, luego lo bajamos a 1000 y actualmente lo bajamos a 400. Hay un problema de costos y un problema de eventos. Tuvimos una crisis muy fuerte en un momento porque una persona se enfermó y todo el sistema de contactos que teníamos para el envío a determinadas bibliotecas y personas se perdió. Toda la venta que teníamos... De ahí nos dimos cuenta de que el problema era anterior. Se estaban perdiendo muchas revistas, muchos números, mucha información.*

Electronic publication also helps to eliminate physical barriers. The following is an example of the journal *Cinta de Moebio* from the Universidad de Chile, whose editor lives in another country,

ENG: The journal *Cinta de Moebio* on epistemology of social sciences is already in SciELO. It grew beyond the borders and has such an editorial dynamics that allows them to choose and publish the best articles. *Cinta de Moebio* is a journal from the School, not a department. Its editor has always been the same. He is finishing his postdoc in Manchester but since it is an electronic journal...

SPA: *La revista Cinta de Moebio sobre epistemología de las ciencias sociales ya está SciELO. Ya pasó la frontera y ya tiene una dinámica editorial que te permite escoger y publicar los mejores artículos. Cinta de Moebio es una revista de la facultad, no de departamento. Siempre ha tenido el mismo editor. [Él] está terminando su postdoc en Manchester y como es una [revista] electrónica...*

The value of electronic publication is currently of particular importance in Venezuela because government funding of journals was suspended in 2009 and university budgets have been frozen and reduced in the recent years. This situation poses a burden on universities supporting their main journals and makes it more difficult for new publications to prosper,

ENG: A source of funding is FONACIT but it is delayed with the payments. ... The government has not called a new evaluation of scientific journals since last year in 2009. Many journals have not received yet the monies of grants approved the same year. SciELO Venezuela that gives visibility to the best national journals with funding from FONACIT is also about to collapse.

SPA: *Una fuente de financiamiento es FONACIT pero está retrasado en el desembolso. ... El Estado no convoca a la evaluación de revistas científicas desde el pasado año 2009. A muchas revistas aún no se les ha otorgado el financiamiento (complemento) desde ese mismo año. SciELO Venezuela que da visibilidad a las mejores revistas nacionales con financiamiento de FONACIT también está a punto de colapso.*

The implications of the previous quotation can be confirmed by looking at the journals that are published in SciELO and that used funding from FONACIT, they are not updated, which will affect their inclusion in international indexes as well as their permanence in SciELO.

The interviewee from the Universidad del Zulia explains how under those circumstances the institution relies on electronic publication to assure the frequency and on-time publication of its journals,

ENG: We perceive a reversal from the government because FONACIT that used to partially subsidize some refereed journals from the LUZ, it is not currently doing it. CONDES is the only one remaining and we are trying with great difficulty to definitely convince the editors that the only way of sustaining the journals in the future is through electronic [publication].

SPA: *Percibimos un retroceso por parte del gobierno porque el FONACIT que subvencionaba parcialmente algunas revistas arbitradas de la LUZ hoy en día no lo está haciendo. Solo queda el CONDES y con mucha dificultad, estamos intentando ver si los editores se convencen definitivamente que la única vía de sostenimiento a futuro es la vía electrónica.*

In short, electronic publication is changing the dynamics of publication of journals. Cost reduction, expansion of potential audiences, and elimination of physical borders are seen as advantages. However, journals keep a small circulation for subscribers, libraries, and people who still prefer hard copies. In addition, some areas like humanities do not want to give up print publication. On the other side, when there is a reduction of funding sources, like in the case of public funding for journals in Venezuela, electronic publication seems to be a viable alternative.

The second indicator in the subcategory of *publication formats* is the use of **Open Access** for electronic publication. All the universities embraced OA. This is an issue that was not discussed much during the interviews. A few comments include the influence of OA in the decrease in number of print subscriptions. For instance, one of the editors of the Pontificia

Universidad Católica de Chile said, “*Hay muy pocas suscripciones; casi no se usa por el open access.*” [There are very few subscriptions; it is not very used due to the open access]. Important here is to recognize that OA generates new models of publication. Many journals have transitioned from a method of traditional print publication where publishers struggled to sell subscriptions, to an electronic method of publication with no fees for readers and where subscriptions are not necessary. The new way to identify readers is usually through registration in the journals’ webpage.

In an interview at the Universidad del Valle from Colombia, the informant mentions that the institution supports journals in different ways and less developed or positioned journals are provided at least access to electronic publication using OJS, “*...para aquellas [revistas] que no están indexadas, el apoyo es que nos facilita la migración al Open Journal System; la universidad lo va a administrar*” [...for those journals that are not indexed yet, the support will consist of facilitating the migration to the Open Journal System; the university is going to manage it]. At this university, journals indexed in Publindex receive two kinds of funding depending on their category in that index. The interviewee did not explain what expenses that funding would be allocated for but it could be expected that it would cover markup for SciELO, new personnel, printing costs, and other costs necessary to develop a journal.

Universities use different **OA platforms** to publish online. A university can have a unified (for instance, Universidad de Antioquia) or diverse platforms (for example, Universidad Católica de Chile), which depends on existing institutional policies and initiatives at each institution. Some journals do not create their own site and use existing services instead; that is the case of the main journals from the Universidad de Concepción and some journals from the Universidad Central de Venezuela, which are published in SciELO and/or RedALyC. Some

platforms are developed for a specific journal (Acta Odontológica Venezolana from the Universidad Central), some are platforms developed by the university (SaberULA from Universidad de Los Andes in Venezuela), some are adaptations of existing software (Universidad de Chile), and some acquire existing systems (Minga Online from Universidad Austral de Chile). Among the latter, OJS is the most used by the universities (Universidad Nacional de Colombia, Universidad de Antioquia, Pontificia Universidad Javeriana, Universidad del Valle, and Universidad del Zulia). In a previous quotation, the interviewee mentioned that the university manages OJS. All the Colombian universities in this study have followed similar paths. For instance, the Pontificia Universidad Javeriana was doing pilots in 2009. In the next quotation is also important to notice that the university unit that manages online publications is related to the ICT office,

ENG: The University created the *Ático* project that manages OJS and everything related with software and hardware. There is a person who will work on a second pilot with OJS with a couple journals because we cannot jump to use the program without knowing all the characteristics and the impact that it could have. It manages authors, referees, everything electronically. We must go warily to make it work really well.

SPA: *La universidad creó el proyecto Ático desde donde se maneja OJS, y todo lo que tiene que ver con software y hardware. Ya hay una persona que va a trabajar en una segunda prueba piloto con OJS con un par de revistas, porque no podemos meternos a usar un programa sin saber todos los aspectos y el impacto que pueda tener. Se manejan autores, evaluadores, todo electrónico. Hay que ir con pies de plomo para que la cosa funcione realmente bien.*

The Universidad de Antioquia is working on an initiative of the office of the Vice Rector for Research (2009). Their strategy is to start including in the repository those journals in the highest categories of Pubindex and later include others as they ascend in the index,

ENG: We already implemented the OJS software. We are doing it thanks to an initiative of the office of the Vice Rector [for research], with all the university journals in category A [Pubindex]. They are nine. The idea is to have one portal for those journals

and later as we see others entering... to include them in the portal. Since all the journals are free of charge in OJS, we are in the process of having the journals there.

SPA: *En este momento ya implementamos el software de OJS. Nosotros lo estamos haciendo por iniciativa de la vicerrectoría con todas las revistas de la categoría A de la universidad. Son nueve. La idea que se tiene es tener un portal único para esas revistas y después en la medida que las otras vayan ingresando... incluirlas en el portal. Como todas las revistas son gratuitas en el OJS, estamos en el proceso de tener todas las revistas ahí.*

The following excerpt from the interview with an editor shows how the journal is doing the process to start publishing the journal using OJS. Important to notice here is the mention to indexes where the publication will be available when it is published. One of the information services that have a link from OJS is Google Scholar. It is possible that journal editors have to learn to differentiate between bibliographic directories and lists and indexes that do journal evaluation and analysis of bibliometric indicators. The trend is to call all of them “indexes.” In the case of Google Scholar, besides making the documents of a journal searchable, it provides information of number of citations that an article has received.

ENG: We are learning the codes to publish the journal in OJS. The fact of using that software gives access to three indexes.

SPA: *Estamos aprendiendo los códigos para montar la revista en OJS. El hecho de usar ese software ya da acceso a tres índices.*

Another trend in electronic publication is the development of **journal/institutional repositories**. In the study, Universidad de Chile, Universidad Austral, Universidad Nacional de Colombia, Universidad de Antioquia, Universidad Central de Venezuela, Universidad del Zulia, and Universidad de los Andes have advanced in the creation of journal and/or institutional repositories. With different levels of consolidation, four universities, Nacional de Colombia

(Portal de revistas UN, <http://www.revistas.unal.edu.co/>), Antioquia (Sistema de Revistas UdeA, <http://aprendeonline.udea.edu.co/revistas/>), Central de Venezuela (Saber UCV, <http://saber.ucv.ve/jspui/>) and Zulia (Revicyh LUZ, <http://revistas.luz.edu.ve/revicyhluz/>), created their repositories using the OJS methodology. On the other side, the repository of the Universidad Austral (Minga Online, <http://mingaonline.uach.cl/scielo.php>) was designed following the SciELO methodology, which as it was discussed above, will make easy for its journals to be included in other prestigious indexes and have access to bibliometric indicators. The Universidad de los Andes developed an institutional repository called Saber ULA (<http://www.saber.ula.ve/>), “*Las revistas financiadas por el CDCHT están en la página web y en Saber ULA que es un repositorio institucional extraordinario para nosotros*” [The journals funded by the CDCHT are in the website and in Saber ULA that is an extraordinary institutional repository for us]. Having developed knowledge and capacity on building electronic repositories, that institution is also in charge of REVENCYT, the Venezuelan Index of S&T journals (<http://www.revencyt.ula.ve/scielo.php>). The universities that do not have a repository yet, still publish lists of their journals and links to their sites. That is the case of Pontificia Universidad Católica de Chile (<http://www.uc.cl/es/investigacion>), Universidad de Concepción (http://www2.udec.cl/~webpubl/sello_edit/index.html), Pontificia Universidad Javeriana (<http://revistas.javeriana.edu.co/> and <http://www.javeriana.edu.co/editorial/revistas.htm>), and Universidad del Valle (<http://www.univalle.edu.co/publicaciones/revistas.html>). The Universidad Católica Andrés Bello, which is the less developed in terms of electronic publication, publishes digitalized versions of its journals through the library (<http://www.ucab.edu.ve/revistas-digitalizadas.html>). As it was mentioned previously, some schools at the Universidad de Chile have also created their own repositories.

In summary, universities in this study are migrating from print to electronic publication. Reasons such as lower costs and larger audiences were mentioned by the interviewees. Electronic publication is accompanied by open access models of publication that are also seen as positive since the journals' content is available to everybody at no fee. Universities use different platforms for the publication of journals. Some are unified, some are not. The most used is OJS, which has also been utilized to create journal repositories. In some cases, universities used external repositories to publish the journals. This includes SciELO and RedALyC. Those elements, electronic publication, open access, and repositories show a trend in journal publication among the universities studied. They increase the visibility of publications. Figure 6 shows graphically what it was described above.

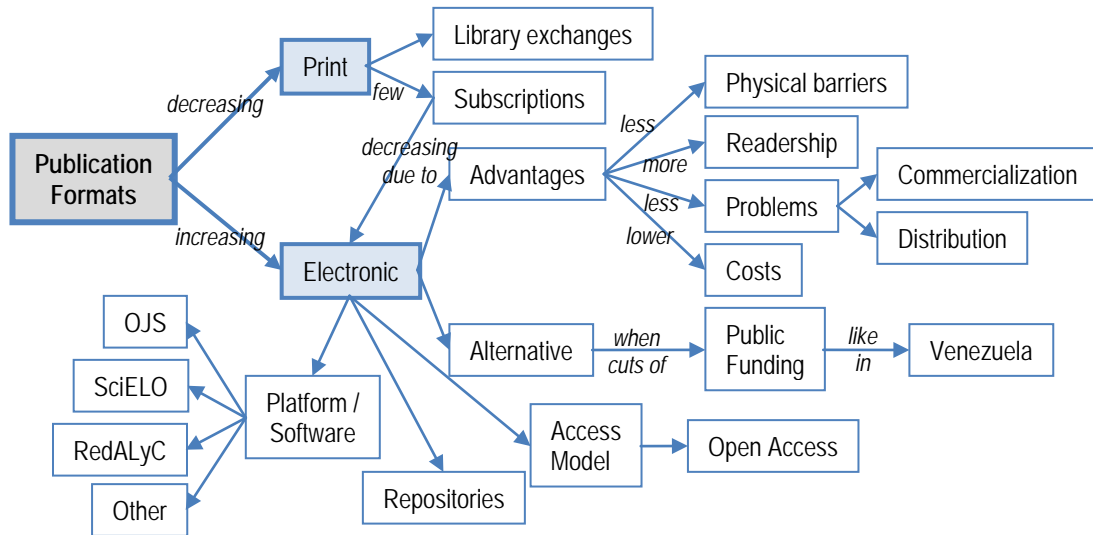


Figure 6. Trends in publication formats

4.2.6 Policies, strategies, and resources: journal funding

The third subcategory, *journal funding*, looks at where journals obtain funding for publication. All the institutions in the study provide different kinds of **university funding** for journals and they vary from institution to institution. The Pontificia Universidad Católica de Chile provides some funding for the journals for the top journals, as expressed by one of the interviewees, “*El fondo de publicaciones periódicas de la Vicerrectoría de Comunicaciones y Asuntos Públicos es un fondo fijo que entrega la universidad por estar indexados en ISI y SciELO*” [The fund for periodical publications of the Vice Rector for Communications and Public Affairs is a fixed fund that the university grants to journals indexed by ISI and SciELO]. Schools and other academic units at this university also have developed funds like the one of the School of Architecture,

ENG: There is a development fund at the School of Architecture, Design and Urban Studies; however, it was considerably reduced last year, contributing only 1/7 of the previous year, because it is focusing on funding projects that are beginning.

SPA: *Existe el Fondo de Desarrollo de la Facultad de Arquitectura, Diseño y Estudios Urbanos; sin embargo se ha reducido considerablemente desde el año pasado, aportando un séptimo que el año anterior, dado que se ha enfocado en financiar proyectos que estén comenzando*

At the Universidad de Chile, as it has been described before, the academic units are autonomous and manage independent budgets. For instance, departments at the School of Social Sciences manage their own budgets and fully fund department journals (**academic unit funding**). There is also limited school funding. The interviewee mentions journals that do not get funding and the efforts to fund indexation of main journals, which are part of what the School calls the *Iniciativa Bicentenario JGM* [Bicentennial Initiative JGM] in 2011 (http://www.facso.uchile.cl/?_nfpb=true&_pageLabel=notFacso&url=71625),

ENG: Regarding funding for journals at the school, the funds are associated mostly with the departments and the funding from the school is secondary. For example, the *Revista de Psicología* gets its funding from the Department of Psychology. The school could support a journal on the basis of a specific project. This year for the first and only time, we will have a fund for journals with the purpose of supporting the indexation, either SciELO or ISI. ... In general, journals associated with departments have all they need. ... Not [all journals are funded]. For instance, there are journals that are just starting as a professor's initiative and they do not have funding, [though] thanks to the Internet they can be published online. There are student journals that appear and disappear throughout history, and do not have funding either.

SPA: *En relación a la financiación de las revistas de la facultad, los fondos están asociados a los departamentos principalmente y con apoyo de fondos de facultad en forma secundaria. Por ejemplo, la Revista de Psicología obtiene sus fondos del Departamento de Psicología. La Facultad podría apoyar alguna revista en base a un proyecto específico. Este año por primera y única vez tendremos un fondo para la revistas con el propósito de apoyar su proceso de indexación, ya sea SciELO o ISI. ... En general, las revistas asociadas a Departamentos tienen todo lo que necesitan. ... No [se financian todas las revistas]. Por ejemplo, hay revistas que están recién partiendo por iniciativa de un académico y no tiene fondos, [aunque] gracias a Internet se puede publicar online. Hay revistas de alumnos que aparecen y desaparecen a lo largo de la historia, que tampoco tienen fondos*

At the Universidad Austral, part of the funding for journals comes from competitive funds from the Division of Research and Development that is part of the office of the Vice Rector for Academic Affairs (UACH, 2007). As an interviewee expresses, "*Parte de la financiación viene de la Dirección de Investigación, por el doctor Zumelzu. La única exigencia es mantener la calidad*" [Part of the funding comes from the Direction of Research, from Dr. Zumelzu. The only requirement is to maintain the quality]. The following fragment of interview from the Universidad Austral introduces one of the reasons for the growth of journals and the urgency for having them indexed: the relationship between salary bonuses and the publication in indexed journals. As it is described throughout the document, in Chile, professors receive bonuses for publishing in indexed journals. However, not all indexes are accepted in Chile. The only ones that count are journals from the WoS and SciELO; however, there are differences

between those two. Articles from the former receive a bigger bonus than those from the latter. The proportion, as it was expressed by several interviewees, is something around 10:3 between WoS and SciELO. In consequence, editorial committees and universities try to support the inclusion of their journals in SciELO and the WoS and provide funding to pursue that indexation,

ENG: [There is] also funding for indexed journals and those who publish in indexed journals. They receive higher or lower bonuses depending on where they publish. Our big problem is that we do not have a citation system or index. We do not appear in all the indexes; therefore people who cooperate with journals of the university receive a lower bonus than journals in larger areas, but the recognition is the same.

SPA: *También [hay] apoyos a revistas indizadas y a quienes publican en revistas indizadas. Les dan más o menos aporte económico dependiendo de dónde publiquen. El gran problema nuestro es que nosotros no tenemos un sistema o índice de citaciones. No aparecemos en todos los índices, entonces la gente que colabora con revistas de la universidad recibe un aporte menor que en otras revistas más grandes de otras áreas pero el reconocimiento es el mismo.*

At the Universidad de Concepción in Chile, the press unit provides full funding for ISI and SciELO journals, “*El sello editorial nos convocó cuando subimos a SciELO. Financia las revistas totalmente. Él ha sido un gran motivador para que las revistas de la universidad lleguen a SciELO.*” [The university press called us when we were admitted in SciELO. It fully funds journals. It has been a great motivator for journals to reach SciELO]. From the interviews, it is not possible to know what happens with journals that are not indexed and how other publications obtain funding. The emphasis, as it has been shown above, is on WoS and SciELO journals and the interviewee recognizes that is an investment with no (monetary) recovery. The latter is a theme that needs to be analyzed.

ENG: The university press provides funding for SciELO and ISI journals, basically to cover editing and printing costs, around \$1,5 millions [USD\$3,210.79, exchange rate USD\$1 = CLP\$467,175] for issue, with little possibility of recovery, some through library exchange, but we have to fund them.

SPA: *El sello editorial apoya a las revistas SciELO e ISI, básicamente sacar los costos de edición e impresión, como \$1,5 millones por tomo, con poca posibilidad de recuperación, algo con canje para recibir revistas de otras instituciones, pero tenemos que financiarlas.*

The schools at the Pontificia Universidad Javeriana manage their own budgets and are autonomous allocating funding for their publications. Through the leadership of the coordinator of periodical publications, the university has done an effort to have most of its journals in the national index Publindex. As journals start to ascend in category, costs like the markup for SciELO increase as well.

At the Universidad Nacional de Colombia schools are also autonomous to create their own journals and provide funding to them. The next paragraph confirms this and adds a new element: the value that academic units or institutions give to their publications is evident in the support given to the journals and the participation of professors,

ENG: ...there is inequality concerning the treatment given to many journals in many schools. We are privileged at the school... The School is aware of the importance of its publications and the communication of knowledge. It is not the same in other schools. For instance, the financial situation. They do not give them enough funds. I know of journals from the humanities where the editor is the same proofreader and intervenes in all reviewing processes; he/she does everything. It is the value given to the publications in each academic unit. Participation of the professors of our School is also representative; there are professors working actively on this. There are schools and programs that are not involved in this. That includes, I believe, the treatment that is given to publications. Humanities tried to write a project, creating a publication committee. They were going to allocate some funds but at the end it did not happen.

SPA: *...hay desigualdad en el trato que le dan a muchas publicaciones en muchas facultades. Nosotros en la facultad... somos privilegiados. La facultad es consciente de la importancia de sus publicaciones y la divulgación del conocimiento. En otras facultades no es así. Por ejemplo, la situación económica. No les dan el presupuesto suficiente. Yo sé de revistas de ciencias humanas en las que el editor es el mismo corrector y que interviene en los procesos de revisión; hace todo. Es el valor que se le da a las publicaciones en cada dependencia. También la participación de los profesores de nuestra facultad en la dirección de la universidad es representativa; hay profesores que están muy metidos en eso. Hay facultades y carreras que no están involucradas en eso. Ello incluye, creo, en el trato que se le da a las publicaciones. En*

ciencias humanas trataron de formular un proyecto, creando un comité para las publicaciones. Les iban a asignar una plata pero al final no sucedió así.

The following quotation from the Universidad de Antioquia shows how journal funding also depends of schools and academic units and how they struggle to get the funding. It also includes comments funding sources like vice rectorship funding, subscriptions and fees for publishing articles. The struggles related to funding are evident in the lack of personnel working with that journal,

ENG: Obstacles and challenges? Funding, because it depends on the academic unit. Subscriptions only cover 5%. The school does not have a clear policy to allocate funds for the journal. Every year, we ask for the money from subscriptions and fees for article publication that we started charging in 2007 and cover 25%. For the rest, we look for funding from the office of the Vice Rector for Research and academic units within the school such as the graduate program, the farm program, [and] the dean's office, who, having also their own deficits, struggle to fund the issues. It does not only imply edition and printing but also the lack of enough personnel to comply with all the functions of the journal. I have functions of editor and secretary that are not my responsibility but if they are not done, we end up having important delays.

SPA: *¿Obstáculos y desafíos? La financiación, porque depende de la dependencia académica. La suscripción solo cubre 5%. La facultad no tiene una política clara de destinación de recursos para la revista. Pedimos cada año el dinero de suscripciones y cobro de los artículos que apenas lo empezamos a hacer desde el año 2007 y que cubren el 25%. Del resto se recurre a fondos de la vicerrectoría de investigación y a dependencias de la facultad como el programa de posgrados, el programa de haciendas, el mismo decanato, quienes, como también tiene sus propios déficits, se ven en muchas dificultades para financiar los números. Esto implica no solo la publicación y edición, pero también la falta de contratación de personal suficiente para que se puedan cumplir todas las funciones de la revista. Yo cumplo funciones de editor y secretaria que no me corresponden pero que si no se cumplen, terminamos retrasándonos de manera importante.*

The Universidad de Antioquia (UdeA) has an external source of revenue to fund research-related activities that consists of a stamp. UdeA is a public university of the Department of Antioquia in Colombia. The stamp is sold throughout the department and the revenue generated is used to support research and development. The next quotation talks about the stamp

and associates it with research in the national context including legislation, S&T planning, and the recommendations of an expert commission for the development of S&T in the country. The excerpt also adds to the idea that publications are usually evaluated in two ways: publications in indexed journals and the publication of journals.

ENG: Government's Decree 1444 of 1993 that regulates the roles of university professors, included research. The Universidad de Antioquia was one of its main promoters. After that, the professors who used to do research in secret, because their bosses did not allow it, now are free to conduct research. In addition, their publications were recognized by a merit system. At that time, there were also the recommendations of the wise men (expert) commission (1991) for S&T, [and] the creation of a national [S&T] plan led by Colciencias, giving more relevance to research and the creation of [research] groups. It was easy for the UdeA to integrate into teaching and professors' activities, the requirements from the Decree 1444 and the national plan for S&T. At the same time, between 1993 and 1994, a stamp for the development of the UdeA was created in Antioquia, an initiative that was copied from the Department of Valle with the difference that the revenue generated could not be used to balance financial deficit (in case of Valle, it was to balance Univalle's deficit) but for research and development instead. It turned that, from one year to another, the budget of the UdeA passed from \$300,000,000 [USD\$170,454.55, exchange rate US\$1 = COP\$1,760], in terms of fresh money, to \$1'500.000.000 [USD\$852,272.73].

SPA: *El decreto 1444 de 1993 del gobierno, reglamentando la función del profesor, incluía la investigación. La UdeA fue una de las que más impulsó ese cambio. Ahora el profesor que lo hacía a escondidas porque sus jefes no se lo permitían, ahora tenía la forma hacer su investigación. Además, sus publicaciones eran reconocidas dentro de un sistema nacional de méritos. Desde esa época también estaban las recomendaciones de la comisión de sabios (1991) en el tema de ciencia y tecnología, [y] la creación de un plan nacional abanderado por Colciencias, dando más importancia a la investigación y a la conformación de grupos. Para la UdeA fue fácil acoplar las exigencias del decreto 1444 y las del plan nacional de ciencia y tecnología para la actividad docente y la docencia. También se creó en paralelo entre 1993 y 1994 la estampilla pro desarrollo de la UdeA, iniciativa copiada de la iniciativa del Departamento del Valle, con la diferencia de que los recursos que se generaron no podían ser usados para cubrir el déficit fiscal (que en el caso del Valle era el de Univalle) sino para investigación y desarrollo. Eso representó que de un año para otro, el presupuesto de la UdeA pasara de \$300'000.000, en términos de dineros frescos, a \$1.500'000.000.*

In addition, the Universidad de Antioquia has a special fund to upgrade journals in Publindex. It shows the importance and influence that the national index has on the publication of journals in Colombia. This theme will be analyzed later in detail,

ENG: In addition, [the office of the Vice Rector for Research] has created a special fund for the indexation of journals in Publindex. They have a special program to fund with fresh money 50% of all journals that are in category A2 and want to ascend to category A1, for the journals that want to stay in category A1, and eventually the journals in category B that want to ascend to category A.

SPA: *Y adicionalmente [la vicerrectoría de investigaciones] ha creado un fondo especial para la indización de las revistas en Publindex. Entonces ellos tienen un programa especial de financiación del 50% de recursos frescos para todas las revistas que están en la categoría A2 y quieren ascender a la A1, para las A1 que quieren mantener esa categoría, y eventualmente a las revistas que están en la categoría B que quieran ascender a la categoría A.*

In the case of the Universidad del Valle, the editorial committee of the institution that is part of the Office of the Vice Rector for Research is in charge of providing the funding for the journals (Isaza de Lourido, 2010). The interviewee in the next fragment recognizes it. Seemingly, the university fully funds its journals,

ENG: They give us everything we ask for [funding], we do not charge for our work, and we do not pay to the referees. If we need more money, the editorial committee would help us. Therefore, the problems are not financial.

SPA: *Todo lo que pedimos [fondos] nos lo dan, mucho del trabajo no lo cobramos, y no pagamos a los pares. Si necesitáramos más dinero, el comité editorial nos ayudaría. Entonces los problemas no son económicos.*

Moving to the Venezuelan universities, the interviewee for Universidad Católica Andrés Bello informs about the policy on journal funding, “*La universidad tiene un presupuesto para sus revistas por política*” [the university has a budget for its journals as a policy]. The press unit is charge of funding and publishing the university journals (UCAB, n. d. d).

As it has been described throughout the document, the Universidad Central de Venezuela has several presses and each academic unit is financially and administratively autonomous. The university CDCH that is under the umbrella of the Vice Rector for Academic Affairs does an effort to provide funding for journals that are published through this unit. However, as expressed by a journal editor, there are some financial restrictions in the country that affect areas such as salaries of university professors,

ENG: There is some funding from the CDCH, within its possibilities, because Venezuelan universities have budget restrictions. ... People would think that we are buoyant but they have not raised our salaries in three years. The school does not have money. I do not know...

SPA: *Hay un apoyo financiero del CDCH dentro de sus posibilidades, porque las universidades venezolanas están restringidas en su presupuesto. ... La gente pensaría que los venezolanos estamos boyantes pero no nos suben el sueldo desde hace tres años. ... La facultad no da plata porque no tiene. No se...*

The CDCH at the Universidad Central de Venezuela also provides funding for journals but the budget is limited. The interviewee acknowledges that editors struggle finding funding sources for the journals. In a comment, this person touches an issue that could be problematic for an institution in terms of funding publications: the number of journals that a university or, in this case, an academic unit publishes in terms of funding available from the central administration. The more journals, the smaller the funds available for each publication,

ENG: We are in charge of all processes and production costs of books. We have to set a limit with journals and it is related to a limited budget. ... The annual average of UCV journals funded by CDCH is 40. This year [2009] we have 30. We are getting them indexed and respected. ... We have VEF\$600,000 [USD\$139,534.88, Exchange rate USD\$1 = VEF\$4.3] for journals, VEF\$20,000 for each one, volumes, not issues. ... Editors suffer from not having sources of funding. They are heroes looking for funding here and there. Many of them obtain support from us but we can only do it partially with print journals. ... The School of Humanities and Education used to have 14 journals. It could be a strength but also a weakness in terms of budget.

SPA: *Nos encargamos de todos los procesos y costos de producción de los libros. Con las revistas debemos poner un techo y tiene que ver el presupuesto limitado. ... El promedio anual de revistas UCvistas financiadas por CDCH es 40. Este año [2009] tenemos 30. Se ha ido logrando que vayan siendo indexadas y respeten. ... Ahora tenemos BF\$600.000 para las revistas, BF\$20.000 para cada una, títulos, no números. ... Los editores sufren por no tener las fuentes de financiamiento. Héroe de la patria buscando fondos aquí y allí. Muchos se apoyan en nosotros pero solo lo podemos hacer parcialmente con las revistas impresas. ... La facultad de humanidades y educación llegó a tener 14 revistas. Podría ser una fortaleza pero también una debilidad, por razones de presupuesto.*

The other two Venezuelan universities, Zulia and Andes, also created funds to support their journals. The Universidad de Zulia CONDES provides funding for the journals and emphasizes the electronic publication, “...solo queda el Consejo de Desarrollo de LUZ; con mucha dificultad estamos intentando ver si los editores se convencen definitivamente que la única vía de sostenimiento a futuro es la vía electrónica” [...the only option left is the CONDES; with much difficulty we are trying to convince the editors that the only alternative for future sustainability is the electronic publication]. This excerpt touches an important issue, journal sustainability that in the case of Venezuela is affected by the suspension of the national fund for journals (FONACIT) and the cuts in the budgets of public universities. At one point, the CONDES fully funded or co-funded journals depending on the inclusion of the publication in the FONACIT list. Recently the government approved a modification of the Organic Law on S&T (Gobierno Bolivariano de Venezuela et al., 2011) and launched the PEI (Odremán, 2011). Changes are currently taking place and it is difficult to know if funding from FONACIT for journals is going to be reactivated. Having this into consideration, CONDES provides full funding for LUZ journals, establishing strict rules for its granting and encouraging, as it is showed in the previous quotation as well as in institutional documents. Requirements to obtain funding from CONDES include but not limited to communication of research, peer-reviewing,

declared periodicity, qualifications of the editor, proportion of articles from external institutions, proportion of collaborators from external institutions, indexation, electronic format, and formal aspects of the journals (LUZ et al., 2011).

The Universidad de Los Andes also provides funding for journals from the central administration that in this case is the CDCHT. The following fragment mentions the fields or disciplines where there are more journals. It differences between journals from schools and from research groups,

ENG: We fund 41 journals, distributed by knowledge fields. Social sciences are the area with the highest weight in journals and books. That is because there are more research groups in the social fields, while for sciences and health journals are more from the schools.

SPA: *Financiamos 41 títulos, distribuidos por áreas del conocimiento. El área con mayor peso son las ciencias sociales, en revistas y en libros. Esto se debe a que hay más grupos de investigación en las áreas sociales, mientras que para las ciencias y la salud, las revistas son más de la facultad.*

From the findings of this and previous sections, it is possible to say that the publication of journals in the Chilean, Colombian, and Venezuelan universities of this study is associated, in terms of funding, with two factors: professors' salaries and journal indexation. On the one side, university professors receive salary increases or bonuses for publishing in indexed journals. On the other side, governments and/or universities promote the publication and recognize national journals included in the main regional and international bibliographic indexes.

Funding may come from three sources: government, institution, and other sources. In Chile, journals can apply for competitive funding managed by CONICYT. In Venezuela, even though it is currently suspended and uncertain if it is going to be reactivated, funding from FONACIT used to be available for journals included in the national index. There is no funding

for journals from Colciencias or another government agency in Colombia; however, there are some experiences at the department (province) level with the sales of a stamp pro Universidad de Antioquia whose profit is used to support research-related activities. There is also a stamp pro Universidad del Valle in the Department of Valle but the documents reviewed do not mention journal funding (Univalle, 2009; Univalle, 2011).

At the institutional level, sources of funding for journals can come from central authorities (offices the vice rectors for academic affairs, research, or communications and their delegate units) and/or from academic units, that is, schools, centers, or departments. Additional sources of funding vary from one journal to another including fees for article publication, subscriptions, and advertisement.

Some issues emerged from the findings and will require further analysis. The first one is the restricted funding by some universities to the top journals (included in approved indexes) and the question about how excluded publications can obtain funding to continue being published. Some universities provide full or partial funding for all their journals. The question that emerges is how much of a budget burden may exist when there are many journals in the institution or academic unit to be fully funded? Particular attention will have to be paid to large number of journals within an academic unit when there are financial constraints. Some institutions have requirements to provide and sustain support for journals; others give plenty autonomy to editors to manage their budget with the only conditions of maintaining the quality and continuing positioning the publications in bibliographic databases and indexes. Another element for further discussion is that universities should acknowledge that the publication of journals does not produce financial but other kind of intangible returns; that is a concern when there is still a focus on selling print publications but distribution channels are weak. The last element for later

analysis is the fact that the increasing demands on journals also include growing expenses often associated with indexation, for instance the markup process for SciELO; they affect journal sustainability.

Tables 11-13 summarize the findings about university policies, arrangements and actions to support journal publication. They are organized by country for convenience, even though many of the findings are transversal to the institutions. They include two categories: 1) actors; and 2) policies, strategies and resources. The first category includes the subcategories authorities, and institutional actors. Given that there are not trends that can be identified at specific institutions, the subcategory editors, was outlined in Figure 4. The subcategories included in the category “policies, strategies, and resources” are actions, publication formats, and funding.

Table 11. University policies, arrangements, and actions to support journal publication in Chile

Category	Subcategory	Indicators	University			
			Pontificia Universidad Católica	Universidad de Chile	Universidad de Concepción	Universidad Austral de Chile
Actors	Authorities and journal coordinators	<ul style="list-style-type: none"> Centralized journal coordination Unit responsible – undertakings 	<ul style="list-style-type: none"> Yes Division of Communications – funding, standards 	<ul style="list-style-type: none"> No at central level School, department – funding, standards. Varies 	<ul style="list-style-type: none"> Yes Director, University Press Unit – funding, technical processes, indexation, training. Schools, departments - varies 	<ul style="list-style-type: none"> Yes Division of Research and Development – funding Schools, departments, varies
	Institutional actors	<ul style="list-style-type: none"> Unit/personnel involved in journal publication – role 	<ul style="list-style-type: none"> Editor/editorial team University press unit – eventual printing 	<ul style="list-style-type: none"> Editor/editorial team University press unit – eventual printing, distribution Library – journal repository 	<ul style="list-style-type: none"> Editor/editorial team University press unit – policy, funding, technical processes, SciELO markup 	<ul style="list-style-type: none"> Editor/editorial team Library – SciELO markup, journal repository
Policy, strategies and resources	University actions	<ul style="list-style-type: none"> Model journals Inventory & diagnostic eval. Follow-up & performance eval. Training 	<ul style="list-style-type: none"> EURE, unit level Yes Not mentioned Yes 	<ul style="list-style-type: none"> Not mentioned Not mentioned Not mentioned Yes 	<ul style="list-style-type: none"> Atenea, tradition Yes Not mentioned Yes 	<ul style="list-style-type: none"> Archivos Medicina Veterinaria, Estudios Filológicos Not mentioned Not mentioned Yes
	Publication formats	<ul style="list-style-type: none"> Transition print to electronic Open Access Platform/software Repositories 	<ul style="list-style-type: none"> Yes Yes Several No. Link to journal pages from Research page 	<ul style="list-style-type: none"> Yes Yes Adapting OJS Yes. Journal repositories – university, schools. OJS methodology 	<ul style="list-style-type: none"> Yes Yes SciELO, RedALyC No. Link to journals from University Press Unit page 	<ul style="list-style-type: none"> Yes Yes SciELO Yes. Journal repository. SciELO methodology – Minga Online
	Journal funding	<ul style="list-style-type: none"> Sources of funding for journals 	<ul style="list-style-type: none"> University competitive fund for ISI, SciELO journals Academic unit funding CONICYT competitive fund Other sources 	<ul style="list-style-type: none"> School, department funding CONICYT competitive fund 	<ul style="list-style-type: none"> University funding for ISI, SciELO journals Some university funding for 2-3-year-old promising journals CONICYT competitive fund Other sources 	<ul style="list-style-type: none"> University funding for ISI, SciELO journals based on impact factor CONICYT competitive fund Other sources

Table 12. University policies, arrangements, and actions to support journal publication in Colombia

Category	Subcategory	Indicators	University			
			Pontificia Universidad Javeriana	Universidad Nacional de Colombia	Universidad de Antioquia	Universidad del Valle
Actors	Authorities and journal coordinators	<ul style="list-style-type: none"> Centralized journal coordination Unit responsible – undertakings 	<ul style="list-style-type: none"> Yes Coordinator of periodical publications, University Press Unit – technical and strategic processes 	<ul style="list-style-type: none"> No School – funding, standards. Varies 	<ul style="list-style-type: none"> Yes Leader, committee of journal editors, representative to office of Vice Rector for Research – funding, standards 	<ul style="list-style-type: none"> Yes Editorial committee – funding, standards.
	Institutional actors	<ul style="list-style-type: none"> Unit/personnel involved in journal publication – role 	<ul style="list-style-type: none"> Editor/editorial team University Press Unit – technical processes, strategic work, training University printing unit Library – markup for SciELO and other indexes Office of the Vice Rector for Academic Affairs - policy ICT office – platform, server Legal office – copyright, open access 	<ul style="list-style-type: none"> Editor/editorial team Academic unit authorities – policy, funding School of Medicine, Department of Public Health – SciELO markup Library – journal repository 	<ul style="list-style-type: none"> Editor/editorial team Vice rector for research – funding University press unit – eventual printing, distribution ICT office, Vice rector for Teaching – journal repository Library – SciELO markup 	<ul style="list-style-type: none"> Editor/editorial team Vice rector for research – policy making. Vice deans for research – policy execution
Policy, strategies and resources	University actions	<ul style="list-style-type: none"> Model journals Inventory & diagnostic eval. Follow-up & performance eval. Training 	<ul style="list-style-type: none"> Universitas Psychologica, Cuadernos de Administración Yes Yes Yes 	<ul style="list-style-type: none"> Revista de Salud Pública Yes Not mentioned Yes 	<ul style="list-style-type: none"> Several Not mentioned Not mentioned Not mentioned 	<ul style="list-style-type: none"> Colombia Médica Not mentioned Not mentioned Yes
	Publication formats	<ul style="list-style-type: none"> Transition print to electronic Open Access Platform/software Repositories 	<ul style="list-style-type: none"> Yes Yes OJS Link to journals from University Press Unit page 	<ul style="list-style-type: none"> Yes Yes OJS Yes. Journal repository. OJS methodology 	<ul style="list-style-type: none"> Yes Yes OJS Yes. Journal repository. OJS methodology 	<ul style="list-style-type: none"> Yes Yes OJS Yes. Journal repository. OJS methodology
	Journal funding	<ul style="list-style-type: none"> Sources of funding for journals 	<ul style="list-style-type: none"> School funding 	<ul style="list-style-type: none"> School funding 	<ul style="list-style-type: none"> Office of Vice rector of research (stamp) Competitive fund – partial for journal publication SciELO fund Publindex - Promotion from A2 to A1 journals Academic unit budget 	<ul style="list-style-type: none"> University funding – all journals depending on indexation in Publindex, OJS for not indexed

Table 13. University policies, arrangements, and actions to support journal publication in Venezuela

Category	Subcategory	indicator	University			
			Universidad Católica Andrés Bello	Universidad Central de Venezuela	Universidad del Zulia	Universidad de los Andes
Actors	Authorities and journal coordinators	<ul style="list-style-type: none"> Centralized journal coordination Unit responsible – undertakings 	<ul style="list-style-type: none"> Yes University Press unit – funding, standards 	<ul style="list-style-type: none"> No School 	<ul style="list-style-type: none"> Yes Consejo de Desarrollo (CONDES) – Funding, standards, policy 	<ul style="list-style-type: none"> Yes Journal coordinator, Consejo para el Desarrollo Científico (CDCHTA) – funding, standards, policy
	Institutional actors	<ul style="list-style-type: none"> Unit/personnel involved in journal publication – role 	<ul style="list-style-type: none"> Editor/editorial team University press – technical processes, distribution Library – journal digitalization, repository 	<ul style="list-style-type: none"> Editor/editorial team University press units: CDCH plus other 16 - Varies 	<ul style="list-style-type: none"> Editor/editorial team Library – journal repository 	<ul style="list-style-type: none"> Editor/editorial team ICT office – Saber ULA, REVENCYT Library – SciELO markup
Policy, strategies and resources	University actions	<ul style="list-style-type: none"> Model journals Inventory & diagnostic eval. Follow-up & performance eval. Training 	<ul style="list-style-type: none"> No Not mentioned Not mentioned Yes 	<ul style="list-style-type: none"> No Not mentioned Not mentioned Yes 	<ul style="list-style-type: none"> Seven in WoS Yes Yes Yes 	<ul style="list-style-type: none"> Several Yes Yes Yes
	Publication formats	<ul style="list-style-type: none"> Transition print to electronic Open Access Platform/software Repositories 	<ul style="list-style-type: none"> Still emphasis on print Digitalized copies Digitalized copies Journal repository – digitalized copies 	<ul style="list-style-type: none"> Yes Yes SciELO, RedALyC Yes. Journal repository. OJS methodology. Saber UCV 	<ul style="list-style-type: none"> Emphasis on electronic publication Yes OJS Yes. Journal repository. OJS methodology. Revicyh LUZ 	<ul style="list-style-type: none"> Emphasis on electronic publication Yes Developed by the university Yes. Institutional repository. Saber ULA, REVENCYT
	Journal funding	<ul style="list-style-type: none"> Sources of funding for journals 	<ul style="list-style-type: none"> University Press Unit – All journals 	<ul style="list-style-type: none"> CDCH – 30 journals, partial due to high number of journals and restricted budget 	<ul style="list-style-type: none"> CONDES – All journals meeting requirements. Emphasis on top journals 	<ul style="list-style-type: none"> CDCHT – AI journals but financial struggle

4.3 UNIVERSITY RESPONSES TO PRESSURES AND TRENDS

The previous section described the findings related to the supra category *policy, arrangements, and actions* to support the publication of journals by the 12 Chilean, Colombian, and Venezuelan universities included in this study. The qualitative analysis of in-depth interviews was carried out inductively and complemented with institutional and national documents for accuracy. It generated two categories, actors and policy, strategies, and resources. On the one hand, the category *actors* included the subcategories authorities and journal coordinators, institutional actors, and journal editors. On the other hand, *policy, strategies, and resources* comprised the subcategories university actions, publication formats, and journal funding. The findings show that without affecting editors' and editorial committees' autonomy to develop their journals, universities have created different strategies and different actors have become involved in supporting journals. For instance, some universities have an authority and/or a coordinator who is in charge of providing funding, guidance, and training, as well as developing strategies to position the institutions' journals in national and international bibliographic directories and indexes. Unlike top journals in each institution that tend to have full access to funding, less developed and positioned journals might struggle to find the financial resources for publication. Universities are migrating from print to OA electronic publication. In addition, with some exceptions, press units are less involved in the publication of journals (apart from usual technical processes) and other units such as libraries and ICT offices are getting more involved. Those units are creating repositories of journals and other documents and implementing the platforms

for electronic publication. In general, the role of the editor is recognized as essential for journal success but it is not translated into institutional policies and arrangements like salary and other incentives.

In this section, the analysis moves to the supra categories *national, regional, and global trends and pressures* associated with the publication of journals among the universities included in this study. It looks at how the university policy, arrangements, and actions described in the previous section are responses to those trends and pressures. As well as in the previous section, the qualitative analysis of the interviews was carried out inductively and complemented with institutional, national and other relevant documents. The first part provides a description of the *national trends and pressures*, starting with issues common to the three countries and continuing with an analysis of how those issues take place in each country.

4.3.1 Supra category: National trends and pressures

The motivation to conduct this study comes from noticing the growth that LA&C journals have experienced in the last two decades and how this growth is taking place particularly in universities. Chile, Colombia, and Venezuela have unique realities; however, there are some common threads that are associated with the growth of scholarly/scientific peer-reviewed journals. In general, the interest in journals has been prompted by the availability of public funding (Chile and Venezuela), the existence of national journal evaluation systems as a part of the science and technology policy (Colombia and Venezuela), the participation of government agencies in promoting journals (CONICYT in Chile, Colciencias in Colombia, and FONACIT in Venezuela), the existence of product-based salary/bonus systems represented by, among others,

the publication of articles in indexed journals (Chile, Colombia, and Venezuela), university accreditation that values the existence of institutional publications (Chile and Colombia), and the discussion about university rankings (Chile, Colombia, and Venezuela).

4.3.1.1 Chile

Starting in the 1970s during the government of General Augusto Pinochet, Chile underwent a country wide process of government reduction, institutional privatization and free marketization. Today, after more than two decades of the end of the dictatorship, the market-oriented economy continues. As a consequence, direct government funding for public and private universities was reduced and institutions had to seek alternative sources of revenue, for instance, tuition fees. However, there exist different kinds of competitive public funds that universities can apply for,

ENG: Research funding is exclusively based on competitive public grants, like the rest of Latin America. In Chile [investment] is 0.7% GDP. There is a variety of grants, from those for individual researchers that are small but are the basis of the whole system. They are done through FONDECYT that is the Fund for Scientific and Technological Development. It is given by the curiosity of researchers. They determine the topic. There is also a series of funds that are more guided by government agencies and public policies. There are more organic projects that gather together universities and teams or networks of researchers, some more applied than others, some require working with the private sector or not, and so on. There is a great variety. In recent years, there has been a great interest in promoting research towards innovation. Hence, there is funding for applied projects. Topics such as copper, banking, aquiculture, etc. There are some toward natural resources and other toward service sectors. There is not much development in engineering.

SPA: *El financiamiento de la investigación es íntegramente por concurso de carácter público como en el resto de América Latina. En Chile [la inversión] es como el 0,7% del PIB. Los concursos son muy variados, desde concursos para investigadores individuales, que es pequeño pero que es la base de todo el sistema. Se hace a través del FONDECYT que es el Fondo de Desarrollo Científico y Tecnológico. Es dado por la curiosidad de los investigadores. Ellos determinan el tema. Luego hay una serie de fondos más guiados por los organismos del estado y las políticas públicas. Hay proyectos mucho más orgánicos que agrupan a universidades y equipos o redes de investigadores, unos más aplicados y otros menos, unos que obligan a trabajar con la empresa o no, en*

fin. Hay una gran variedad. En los últimos años ha habido un gran interés de fomentar la investigación hacia la innovación. Entonces hay financiación para proyectos aplicados. Temas del cobre, bancarios, acuícola, etc. Hay unos hacia los recursos naturales y otros hacia los sectores de servicios. No hay un gran desarrollo en las ingenierías.

A group of traditional universities in Chile belongs to the *Consejo de Rectores* (Council of University Presidents) and are the main recipients of public revenue. In addition, those universities, with a few other institutions, are the largest recipients of competitive funding like research funds. As one interviewee says,

ENG: Here in Chile, as well as in the rest of Latin America, research is highly concentrated in a small number of universities. They are national, traditional universities that have received for a long time the largest financial support from the government. They modernized and established the academic career earlier. Researchers started to have an academic profession in the 1950 and early 1960s. ... There are basically two universities that are dedicated to do research in Chile. They are the Universidad de Chile and Universidad Católica. If it is taken more loosely, there are six universities that have a more-or-less interesting scientific production. They are Concepción, Santiago, Católica de Valparaíso, and the Universidad Austral in Valdivia. They are the universities with more research capacity.

SPA: *Acá en Chile, como en el resto de América Latina, la investigación está altamente concentrada en un pequeño número de universidades. Son las universidades nacionales, tradicionales que han recibido a lo largo del tiempo mayor apoyo estatal financieramente. Se modernizaron más tempranamente y establecieron antes la carrera académica. Los investigadores empezaron a tener una profesión académica en los 50 y comienzos de los 60. ... En Chile hay básicamente dos universidades que se dedican a la investigación, que son la Universidad de Chile y la Universidad Católica. Si se toma un poco más laxo, hay unas seis universidades que tienen una producción científica más o menos interesante. Son Concepción, Santiago, Católica de Valparaíso, y la Universidad Austral de Valdivia. Son las universidades que tienen más capacidad de investigación.*

Part of the government funding for universities is based on productivity. There is a university ranking system that considers four broad indicators: undergraduate enrollment, number of professors with doctoral degrees, nationally-internationally funded projects, and articles published in WoS and SciELO journals. The publication of articles in WoS and SciELO

journals is a faculty productivity indicator and universities receive government funding based on those products. Universities have different policies to use those monies and develop different strategies to increase publications of their professors. For instance, the Universidad de Chile uses that money to fund research projects. Other universities pay bonuses to the professors for publications in WoS and SciELO journals. Therefore, the growth of journals published in Spanish and included in SciELO is a consequence of this product-based system. However, WoS and SciELO publications are treated differently; while articles published in the ISI periodicals receive 100% of the incentives, manuscripts published in SciELO journals only receive around 30% of the incentive. Other databases/indexes are not considered for money incentives.

ENG: Yes, [researchers] receive bonuses for publishing in SciELO and ISI [journals]. It is a government contribution. It is given to the universities based on the number of publications; it is unifying. Also universities that have journals indexed in SciELO and ISI. Coefficients are not the same; journals indexed in ISI receive more than those in SciELO. A money incentive... Universities give incentives to their scholars for publishing in ISI and SciELO; the incentive is usually different. However, there is a great demand for academic journals for being in SciELO.

SPA: *Si, por publicar en [revistas] SciELO e ISI [los investigadores] tienen una bonificación. Es el aporte estatal. Se le entrega a las universidades por el número de publicaciones, es unificador. También las universidades que tienen publicaciones en revistas indexadas en SciELO e ISI. Los factores no son iguales; reciben más las revistas indexadas en ISI que en SciELO. Un incentivo en dinero... Las universidades le dan incentivos a sus académicos por publicar en ISI y SciELO; usualmente el incentivo es diferente. Por eso hay tanta demanda de las revistas académicas por estar en SciELO.*

Even though Chile does not possess a unified policy in S&T, it has government agencies executing the strategies to develop the sector. The current emphasis is given to promoting innovation and developing research-industry relationships. CONICYT is the Chilean agency in charge of S&T. CONICYT has programs in three areas: S&T base, human capital, and complementary support (<http://www.conicyt.cl/573/propertyname-530.html>). The CONICYT

scientific information program, part of the latter area, has a competitive fund for scholarly/scientific journal publishing. It also coordinates the Chile chapter of SciELO. As it was mentioned before, journals can get funding from the government through grants managed by CONICYT. Editors submit grant applications that include publication but emphasizing an improvement plan.

ENG: [Policies were] proposed four years ago, emphasizing innovation. There are the functionality and the fund, other funds and agencies. There is not a unified policy. ... CONICYT has taken it for a long time. In our case of the scientific information [program], we have always worked with journals. Our policy has been access to information, currently to data and information, and visibility.

SPA: *[Las políticas fueron] propuestas hace cuatro años, enfatizando innovación. Existen la funcionalidad y el fondo, otros fondos y agencias. No una política unificada establecida. ... CONICYT lo ha tomado en cada área por largo tiempo. En nuestro caso [del programa] de información científica, siempre hemos tenido que ver con revistas. Nuestra política ha sido de acceso a la información, actualmente a datos e información, y la visibilidad.*

Editors in Chile use the public funds from CONICYT as one of the sources of funding for their journals. However, as it was analyzed above, they recognize that funding from the government increases the workload because the funds are granted to journal development projects. That shows how the demands of editorial work are increasing as editors seek to position journals in international indexes.

ENG: The CONICYT fund is a little bit more complicated. The applications must include a development project. One part is the publication and the other is a project. One of the problems is that it forces to invent extra work. It overburdens something whose edition already represents a lot of work.

SPA: *El fondo CONICYT es un poco más complicado. Las propuestas deben incluir un proyecto de desarrollo. Una parte importante es para la publicación en sí y la otra para un proyecto. Uno de los problemas es que obliga a inventar pega [trabajo] extra. Sobrecarga a algo cuya edición regular es [en sí] bastante trabajo.*

Table 14 shows the participation of Chilean universities in the SciELO Chile portal. There is not a national journal inventory; therefore, the closest to an up-to-date list is the information of SciELO Chile that currently includes 86 journals. 64 of those journals (74.4%) are published by universities, of which 33 (38.4%) are published by the four universities included in this study. Individually, they are the institutions with the largest number of journals in the database. The Pontificia Universidad Católica de Chile is the institution with the highest number of journals in SciELO Chile (n = 13, 15.1%). 20 Chilean universities have journals in SciELO. To have a closer idea of the universe of journals and how many are published by universities, it would be necessary to look at the institutions' websites and compare them to the catalogue and directory of Latindex. It was mentioned in one of the interviews that people from CONICYT have considered creating a national journal evaluation index to have an idea of the status of the national journals.

Table 14. Chilean journals in SciELO *

Publisher	Frequency	Cumulative Frequency	Percentage %	Cumulative Percentage %
Pontificia Universidad Católica de Chile	13	13	15.1	15.1
Universidad de Chile	9	22	10.5	25.6
Universidad de Concepción	5	27	5.8	31.4
Universidad Austral de Chile	6	33	7.0	38.4
Other universities (n = 16)	31	64	36	74.4
Scientific/academic societies	17	81	19.8	94.2
Institutes/Centers/Museums	5	86	5.8	100

* SciELO Chile. (2011). Retrieved July 21, 2011, from http://www.scielo.cl/scielo.php?script=sci_alphabetic&lng=en&nrm=iso

Some features of the Colombian bibliographic index Publindex are valued by CONICYT in Chile, which has considered developing a journal evaluation system because it opens to the possibility of having the state of the art and a ranking of national journals,

ENG: We are thinking of developing a journal evaluation system. We have a high demand mostly from university journals. We have talked... about the possibility of

developing something like Publindex that is a database that gives you the possibility of having the state of the art of national journals. This is not the same with SciELO because it is just another database, of course proportionately speaking, as ISI or Scopus can also be, or any other database that has its own selection criteria. It is like a selective index. On the contrary, Publindex is the national database where all the Colombian journals apply and at the same time they rank you according to the criteria. You can easily establish the ABC. These journals meet this, these other ones do not. It is a more fluid way. ... We have the evaluations [that we do for Latindex] and data but we do not have the database, let's say, where the whole group is incorporated. Of course, we have the evaluations... they are stored.

SPA: Estamos pensando en desarrollar un sistema de evaluación de revistas. Tenemos mucha demanda de revistas sobre todo de universidades. Hemos hablado... de la posibilidad de desarrollar algo como Publindex que es una base de datos que te da la posibilidad de tener el estado del arte de las revistas nacionales. Con SciELO no te sucede eso porque es una base de datos más, claro que guardando las proporciones, como lo puede ser ISI o Scopus, o cualquier otra base de datos, que tiene sus propios criterios de selección. Es como un índice selectivo. En cambio Publindex es la base de datos nacional donde postulan revistas colombianas y al mismo tiempo te pueden ir dando ranking de acuerdo a edición que tengan de acuerdo a los criterios. Puedes establecer fácilmente el ABC. Estas revistas cumplen esto, estas otras no. Entonces es una forma con mucho más fluida. ... Las evaluaciones [que se hacen para Latindex] las tenemos, los datos los tenemos, pero no tenemos la connotación de una base de datos, digamos, donde esté todo ese grupo incorporado. Claro, tenemos las evaluaciones... eso está almacenado

In short, at the national level, converging trends and pressures in Chile come from the university ranking, the productivity-based incentive system, the availability of competitive funding, and the coordination of SciELO by CONICYT. Since universities are immersed in a competitive environment, they do not have another option than competing for funding and getting better positions in the rankings. Even though the target in this context is more individual journals rather than institutions, universities have a saying when they develop policy and strategies to help their journals grow. For instance, Universidad de Concepción provides full funding to its top journals leaving out less developed publications. In addition, it is important to remember that 74.4% of scholarly/scientific refereed journals in Chile are published by

universities. Looking at the Vaira (2004) model of allomorphism, the Chilean case fits the world economy competitive structure component of the framework when the government enacts reforming policy. Currently, Chile continues developing a strategy to promote innovation, is discussing new legislation in R&D that includes more investment from the private sector (AIP UChile, 2011), and is holding talks to create a national agreement for education (Gobierno de Chile, 2011). Organizational allomorphism takes place when universities provide funding, electronic platforms, and other resources to make their journals internationally competitive.

4.3.1.2 Colombia

There are in Colombia three major conditions that have favored the growth of journals: faculty salaries, Publindex, and university/program accreditation. The Colombian **salary system for faculty in public universities** is different from most LA&C countries. The Universidad Nacional de Colombia has a system called the *regimen especial de salarios* (special salary system) that recognizes productivity like North American universities. Based on a series of standards and score levels, professors receive salary increases, not just one-time bonuses like colleagues in Colombian private universities and Chilean and Venezuelan universities. In the mid-1990s the government decided to extend this system to the rest of the public universities. However, institutions were not prepared to manage system and it became a chaotic. Almost any product became awardable. Many universities almost filed for bankruptcy in the late 1990s and early 2000s. The following quotation describes the salary systems among public universities in Colombia and shows that there is a fine line between recognizing the intellectual work of university professors through salary incentives and turning the system into a financially unviable model. The lack of clear policies and institutional arrangements can turn an initiative that

recognizes and promotes the generation of new knowledge into a market of publications that generates corruption.

ENG: The Universidad Nacional used to have, beyond any other public or private university in the country, the special salary system. ... One of the issues that it looked at was incentives for publications. ... Publishing was a central issue for the university professor career. ... Colciencias and the Ministry of Education thought that the Universidad Nacional salary system was useful. Then, [in 1993] the first decree (1444) appears universalizing the Universidad Nacional special system in the whole public university sector. ... This produced complicated consequences because the Universidad Nacional had had the special system for a long time but the other public universities did not; they thought the decree was just the decree and started allocating monies but arrangements that the Universidad Nacional developed were missing. There was a committee for score allocation and recognition where a panel of professors from all schools evaluated the products. And the salary incentive was determined. Thus, the topic becomes attractive. ... But they did not counted on the evolution of the Decree 1444. Since there was not capacity or tradition for applying the special system, all universities started to score anything. That is why, when we conducted the study about the impact of Decree 1444, we found scandalous things such as that the Universidad del Atlántico had more publications than all the campuses of the Universidad Nacional combined. At that university, a man who published at El Heraldo de Barranquilla [newspaper] obtained double score because it circulated internationally (Miami). Barranquilla, Valle, etc. did the same way. ... The Universidad del Valle almost filed for bankruptcy. ... The problem was not just the publications; it was poor administrations but the only visible data was publications.

SPA: *La Universidad tenía por fuera de cualquier otra universidad pública o privada del país, era el régimen especial. ... Una de las cosas que contemplaba eran los estímulos a las publicaciones. ... Publicar era un asunto central en la carrera de un profesor universitario... Entre Colciencias y el Ministerio de Educación piensan que ese sistema de la Universidad Nacional es útil. Entonces aparece [in 1993] el primer decreto, el 1444, mediante el cual se universaliza el régimen especial de la Universidad Nacional para todo el sector de las universidades públicas. ... Eso trajo unas consecuencias muy complicadas porque la Universidad Nacional llevaba con su régimen especial mucho tiempo, pero las otras universidades públicas no; entonces ellas pensaban que el decreto era simplemente el decreto y reparta plata, pero faltaban todas las cosas que la Nacional había desarrollado para implementar el decreto en materia de organización que era un comité de asignación y reconocimiento de puntaje donde se evaluaban los productos por parte de un panel de profesores representantes de todas las facultades. Y se determinaba el incremento o estímulo salarial. ... Entonces el decreto 1444 se universaliza y vuelve el estímulo, estímulo salarial. Entonces se vuelve más atractivo el tema. ... Pero no contaban con la evolución del decreto 1444. Como no había capacidad ni tradición para la aplicación del régimen especial, entonces todas las otras universidades comenzaron con la feria del punto. Por eso, cuando hicimos el*

segundo estudio sobre el impacto del decreto 1444, encontramos cosas tan escandalosas como que la Universidad del Atlántico tenía más publicaciones que la Nacional con todas sus sedes. En esa universidad el señor que publicaba en el Heraldo de Barranquilla, como circulaba internacionalmente (Miami), ganaba doble punto. Así hicieron Atlántico, Valle, etc.... El impacto fue enorme. [La Universidad del] Valle casi entra en concordato. ... El tema no eran sólo las publicaciones, eran también malas administraciones, pero el único dato visible era el de las publicaciones.

As a result of the crisis generated by the implementation of the decree 1444, in 2002 a new decree (1279) was enacted trying to solve the issues of its predecessor. One of the provisions of the new decree is that intellectual products should be based on the **Colombian Bibliographic Index/Database Publindex**. Hence the national bibliographic index gained relevance. The following fragment of interview describes the origin and evolution of Publindex,

ENG: The theme of publications begins in the country in 1996. Previously, policies were very precarious, basically funding an issue not even a volume. It was occasional and took place in the 1980s. ... The first census of scientific journals was conducted. ... We got with that first project an idea of the size of science, which generates a discussion with Colciencias because they had at that time what is called the tip of the iceberg policy. The tip is important because there is a very hard mass of ice underneath. The problem that we visualized in 1996 was a formal but critical issue. The evaluation of 1996 showed that national journals were weak at meeting the standards of normalization. They did not have a periodicity, editorial boards, abstracts in at least two languages, and/or keywords... the bibliographic norm. ... In 1998, the CTyS Corporation emerged and it is when Jorge Charum appears. ... CTyS brought experience from the sciences and engineering. They automatized and systematized the model. They developed a computer platform and gave a different approach to the model. While ours was the bibliographic control tradition, they tried to link that with the actor-network theory... That was evident in important modifications that were produced in terms of parameters for each one of the indicators, important things that we did not consider relevant before. ... However, we cannot ignore the impact that it had in the quality of journals. All journals changed. ... Publindex hyper evolved on that side as a journal ranking system but not as an information system or a repository.

SPA: *El tema de las publicaciones arranca en el país en 1996. Antes, en términos de políticas eran muy precarias, básicamente financiar un número, ni siquiera un volumen. Era ocasional, [y] tuvo su momento en los ochenta. ... Se hizo entonces el primer censo de las revistas científicas. ... En ese primer proyecto pudimos tener una idea del tamaño de la ciencia, que generó una discusión con Colciencias porque ellos tenían en ese momento lo que se llama la política de la punta del iceberg. La punta es*

importante porque hay un bloque de hielo abajo durísimo. ... El problema que nosotros visualizamos en el 96, era una cosa formal pero era crítica. ... Lo que la evaluación del 96 muestra es que en el asunto de normalización, de cumplimiento del estándar, las revistas nacionales estaban mal. No tenían periodicidad, comité editorial, no publicaban abstracts en al menos dos idiomas, palabras claves... la norma bibliográfica. ... En 1998 aparece la corporación CTyS donde aparece Jorge Charum. ... CTyS traía más experiencia desde ciencias e ingeniería. Ellos automatizaron y sistematizaron el modelo. Desarrollaron toda una plataforma, un desarrollo computacional, y le dieron un enfoque diferente a los fundamentos del modelo. Mientras que la nuestra era toda la tradición del control bibliográfico, ellos trataron de vincular esto con la teoría actor-red... Eso en concreto se vio en las modificaciones importantes que se produjeron ahí en términos de parámetros de cada uno de los indicadores, cosas importantes que en su momento nosotros no observamos, no vimos muy relevante. ... Sin embargo, no se puede desconocer el impacto que tuvo en la calidad de las revistas. Todas las revistas cambiaron. ... Publindex hiper-evolucionó por este lado, como sistema de ranqueo de revistas, pero no evolucionó como sistema de información ni como repositorio.

Up to that point, there were two moments in the evolution of the Colombian journal evaluation system. The first one identified and focused on the weaknesses of journals in terms of bibliographic standards and the second developed a series of standards for organization and internationalization. Publindex ranks journals based on four main criteria: editorial quality, scientific quality, stability-strictness in publishing time, and visibility. It is recognized that Publindex has evolved and taken Colombian journals to higher levels of excellence. It is also credited for being one of the most successful public policy experiences in the country. There is currently a commission working on a new set of standards and criteria for Publindex. There are two key names to mention here. One is Yuri Jack Gómez who was one of the leaders in the first stage of the Colombian journal evaluation system (Gómez, 1999; Gómez et al., 1998) and the second is Jorge Charum, the leader in the second epoch of Publindex (Charum, 2004; Charum et al., 2002).

The third factor associated with the growth of scholarly/scientific journals in Colombia, **university accreditation**, involves private universities. In 1992, the Law 30 of Higher

Education, including provisions for the development of a monitoring and control system, was enacted (Caro et al., 1993). Colombia started with program accreditation and later institutions. Even though accreditation is voluntary, it has become a factor of competition among universities. One of the criteria included in the accreditation is if the institutions publish their own journals (República de Colombia et al., 2006a; República de Colombia et al., 2006b). Therefore, Publindex is also a key reference among private universities. Universities compete for having more journals in Publindex and for ascending in the ladder to the top categories of this index. Now every school, university, and graduate program wants to have a journal indexed in Publindex. It can be noticed by reviewing Table XXX. Private universities have developed salary systems similar to the ones existing in Chile and Venezuela. The competition is about which university pays the highest bonuses for articles published in indexed journals. The system in Colombia tends to be broader than in Chile regarding the bibliographic databases and indexation systems that are accepted for the salary incentives. It includes Scopus, RedALyC, and discipline-specific indexes.

The most recent journal evaluation in Colombia took place in the second semester of 2010. After the evaluation, 372 journals were included or updated in Publindex: 23 in category A1, the highest in the index, 73 in A2, 66 in B, and 210 in C. Table 15 shows the distribution of journals in Publindex II 2010 by type of publisher regardless their category in the index. 333 journals (89.5%) are published by universities, of which 100 (26.9%) are published by the four universities of this study. They are individually the institutions with the largest number of publications in the index. The Universidad Nacional de Colombia has the largest number of journals: 40 (10.8%). 77 universities have journals indexed in this version of Publindex.

Table 15. Colombian journals in Publindex *

Publisher	Frequency	Cumulative Frequency	Percentage %	Cumulative Percentage %
Pontificia Universidad Javeriana	25	25	6.7	6.7
Universidad Nacional de Colombia	40	65	10.8	17.5
Universidad de Antioquia	22	87	5.9	23.4
Universidad del Valle	13	100	3.5	26.9
Other universities (n = 73)	233	333	62.3	89.5
Scientific/academic societies	24	357	6.5	96.0
Institutes/Centers/Museums/Gov. agencies	14	371	3.8	99.7
Private publishers	1	372	0.3	100

* Publindex (2010). Retrieved June 4, 2011, from <http://201.234.78.173:8084/publindex/>

There is not public funding for journals in Colombia. Public universities allocate resources from the offices of vice rectors for research and/or academic affairs, but mostly from the academic units (schools and departments). Similar situations occur in private universities. In Colombia, some universities have created specific positions to support the development of their journals. University journal coordinators and journal editors also created an association sponsored by the Colombian Association of University Press Units (ASEUC).

In summary, the growth of journals in Colombia is associated to the university salary systems, the national journal evaluation system Publindex, and university accreditation. University salaries reward productivity, public universities through salary increases and private institutions mainly through one-time bonuses. Publindex is seen as a successful policy that has evolved as new demands and issues emerge and has improved the quality of journals in Colombia. Evaluation of productivity uses Publindex as the standard in Colombia. The university accreditation includes indicators such as publications. Unlike Chile and Venezuela, there is not public funding for journals in Colombia. Looking at the Vaira's (2004) analytical model, national pressures and trends are articulated around the three factors mentioned above. However,

Publindex has been a central reference for the university responses supporting the publication of journals. It is used to determine faculty salaries, as a criterion for accreditation, and as a tool for competition between institutions.

4.3.1.3 Venezuela

Even though the private sector has grown significantly in the country in recent decades, Venezuelan higher education is predominantly public and free of tuition for students. Public universities have been places of political confrontation between those in favor and those against the current government. President Hugo Chavez created in 2003 the Universidad Bolivariana de Venezuela (UBV) system as an alternative to the traditional system of higher education. The UBV is mostly a teaching institution. Regarding scientific output, public universities have traditionally been the main sources of research and new knowledge in Venezuela. On the other side, private universities have experienced an important growth in recent decades but they still are mostly teaching-focused institutions. The private university included in this study, the Universidad Andrés Bello, has a good reputation in the country but, as well as its other private peers, is mostly a teaching institution that has slowly started to develop some research capacities. This is evident with the incipient development of policies and resources to support the publication of journals.

The most recent top journal list available from the National Fund for Science, Technology, and Innovation (FONACIT), part of the Ministry of the Popular Power for Science, Technology and Intermediate Industries in Venezuela, was published in 2009. It includes 97 journals, of which 79 (81.4%) are published by universities. 14 universities have journals in this version of the Venezuelan index. The four universities included in this study have 59 journals

(60.8%). The universities Central de Venezuela and Zulia have the largest number of journals with 22 and 25 respectively. On the other side, the Universidad Católica Andrés Bello only has two journals in the list and is the only private university with journals in FONACIT (Table 16).

Table 16. Venezuelan journals in FONACIT *

Publisher	Frequency	Cumulative Frequency	Percentage %	Cumulative Percentage %
Universidad Católica Andrés Bello	2	2	2.0	2.0
Universidad Central de Venezuela	22	24	22.7	24.7
Universidad del Zulia	25	49	25.8	50.5
Universidad de Los Andes	10	59	10.3	60.8
Other universities (n = 10)	20	79	20.6	81.4
Scientific/academic societies	9	88	9.3	90.7
Institutes/Centers/Museums	8	96	8.2	99.0
Private publishers	1	97	1.0	100.0

* FONACIT (2009a). Retrieved May 11, 2009, from <http://www.fonacit.gob.ve/publicaciones/indice.asp>

The number of journals in Venezuela grew in recent decades due to the Law of Universities that establishes that all university professors are researchers. In addition, similarly to what has happened in Chile and Colombia, the creation of the PPI opened the door for professors to increase their salary via productivity. The problem seen by one of the interviewees is that it did not necessarily improved that quality and impact of research,

ENG: There was a deformation because professors publish mediocre articles, looking for the points and the money bonus, which are not the result of serious and in-depth research. ... Classifying productivity generated a mass reaction of professors because the function of all professors, due to the Law of Universities, is research or they are automatically researchers. Instead of having a product evaluation every four years, evaluation and annual bonuses became permanent. It is a salary complement. Parallel systems were created. That also generated a journal proliferation. Where are we going to get readers and authors?

SPA: *Aquí se dio la deformación porque los profesores publican trabajos mediocres buscando los puntos y la bonificación económica que no son resultado de ninguna investigación seria y profunda. ... Clasificar la productividad generó una*

reacción en la masa de los docentes ya que la función de todos los docentes por la ley de universidades, es la investigación o son automáticamente investigadores. En vez de hacerse una evaluación de la productividad cada cuatro años, se pasó a una evaluación permanente y bonificación anual. Es un complemento salarial. Se crearon sistemas paralelos. Eso también generó la proliferación de revistas. ¿De dónde se pueden sacar lectores y autores?

As it was mentioned above, in Venezuela FONACIT is the government agency that has been in charge of evaluating and providing funding for the publication of journals. However, the call for evaluations and funding was suspended in 2009. The FONACIT journal fund had been intended to cover expenses of top ranked journals, including: editing, printing, peer-reviewing, translation, distribution, software, and SciELO markup (FONACIT, 2009b). The councils of scientific, humanistic and technological development of the three public autonomous universities in this study used to co-fund publications included in the FONACIT journal list and fully fund other journals. With the suspension of funding from FONACIT, the councils have been forced to assume the burden and prioritize journals better positioned in indexes. In the case of the Universidad Central de Venezuela, this situation is particularly worrisome since the number of journals published in this institution is very large. For instance, just the school of humanities and education has around 14 journals,

ENG: The annual average of UCV journals funded by the CDCH is 40. This year [2009], we have 30. We are getting them indexed and respected. The School of Humanities and Education had at one point 14 journals. It could be a strength but also a weakness because of budget issues. Editors suffer from not having sources of funding. ... Three years ago, we only funded journals included in the FONACIT list but it is becoming more difficult because it is difficult to find a person there to talk to.

SPA: *El promedio anual de revistas UCvistas financiadas por el CDCH es 40. Este año [2009] tenemos 30. Se ha ido logrando que vayan siendo indexadas y respeten. La facultad de humanidades y educación llegó a tener 14 revistas. Podría ser una fortaleza pero también una debilidad por razones de presupuesto. Los editores sufren por no tener las fuentes de financiamiento. ... Hace como tres años nosotros solo*

financiábamos revistas que estuvieran en el registro de FONACIT, pero cada vez es más difícil porque es muy difícil encontrar ahí una persona que hable con uno.

In another case, the Universidad del Zulia is proud to have the largest amount of journals in the WoS and in the 2009 FONACIT list. Staff members from the CONDES have done an effort to keep their journals up-to-date, which means publishing them on time according to their declared dates. They are also encouraging editors to migrate to electronic-only publication and have developed a repository using OJS to host the university's journals,

ENG: In 2008, the LUZ had six of the eight Venezuelan journals in SCI. Our journals have grown from 14 to 28. ... We are now facing a crisis and are focusing on helping our journals to not to lose periodicity. They are strength of the university. ... FONACIT that used to partially subsidize some refereed journals from the LUZ, it is not currently doing it. CONDES is the only one remaining and we are trying with great difficulty to definitely convince the editors that the only way of sustaining the journals in the future is through electronic [publication].

SPA: *En el 2008, la LUZ tenía seis de las ocho revistas venezolanas en el SCI. Hemos tenido un crecimiento de 14 a 28 revistas. ... Ahora estamos enfrentando un tiempo de crisis y estamos enfocándonos en ayudar para que nuestras revistas no caigan en su periodicidad. Es una fortaleza de la universidad. ...el FONACIT que subvencionaba parcialmente algunas revistas arbitradas de la LUZ hoy en día no lo está haciendo. Solo queda el CONDES y con mucha dificultad, estamos intentando ver si los editores se convencen definitivamente que la única vía de sostenimiento a futuro es la vía electrónica.*

When the source of funding for journals from FONACIT disappeared, it created commotion and publishing institutions had to develop strategies to compensate the lack of public money to fund journals. As it was mentioned before, the Venezuelan government has been reviewing the S&T policy and legislation. Recently, a revised version of the S&T Law (LOCTI) was enacted. It includes a new Research Encouraging Program (PEI) replacing the former Researcher Promotion Program (PPI) (Gobierno Bolivariano de Venezuela, 2010; Odremán,

2011). It remains uncertain whether the journal evaluation and funding program will be re-opened.

ENG: It is regrettable that they just implemented a new program that replaces the PPI for the PEI (research encouraging program), that indicates that national journals will be considered and valued with more emphasis than in the previous program. However, national journals are not being funded or stimulated; the program is suspended.

SPA: *Lo lamentable es que acaban de implementar un nuevo programa que supe al PPI por el PEI (programa de estímulo a la investigación), y señala el mismo que serán consideradas y valoradas las revistas nacionales con mayor énfasis que en el programa anterior. No obstante, las revistas nacionales no están siendo financiadas ni estimuladas; el programa está suspendido.*

Even if the journal program starts again, universities still face financial constraints due to budget restrictions. The following quotation shows the political clash that exists between the current government and traditional universities in Venezuela,

ENG: People would think the Venezuelans are buoyant but our salaries have not been raised in three years. ... The situation gets more complicated because universities have budget deficits and the government has a marked political action, that is, it will efficiently provide funding to loyal institutions and the rest are left apart or get the minimum to survive waiting until the last moment [to provide funding]. ... It could be said that journal funding got a mortal blow with the suspension of the support from the national executive for scientific journals in 2010. There is only our university development council support left, which has its budget frozen since 2007. ... Projected inflation this year [2009] is 40%.

SPA: *La gente pensaría que los venezolanos estamos boyantes pero no nos suben el sueldo desde hace 3 años. ... La situación se complica porque las universidades tienen presupuestos deficitarios y el gobierno tiene muy marcada su acción política, es decir, proporcionará dinero en forma eficiente a las instituciones que le son leales y las otras quedan fuera o le dan el mínimo para sobrevivir, esperando siempre el último momento. ... Puede decirse que la financiación de las revistas ha recibido un golpe casi mortal con el retiro del apoyo del ejecutivo nacional a las revistas científicas en 2010. Solamente se mantiene el apoyo del consejo de desarrollo de nuestra universidad, la cual tiene su presupuesto congelado desde 2007. ... la inflación es proyectada este año [2009] en 40%.*

Besides the funding shortage, there are other factors that affect the sustainability of journals. One factor is the burden created by the high exchange rate of the Venezuelan currency that makes the purchase of printing supplies more expensive since they are usually imported,

ENG: The U.S. dollar is almost three-fold overvalued and, since everything, even the paper, is imported, the costs are becoming higher; in consequence, we had to reduce our [journal] frequency.

SPA: *El dólar [estadounidense] está sobrevaluado casi el triple, y como todo hasta el papel se importa, los costos cada vez son más altos; entonces nos tocó restringir la periodicidad.*

A second factor seen as affecting the publication of journals is the Public Contract Law (Law Decree 5929 of March 11, 2008, modified March 25, 2008). It requires, among other things, at least three bidders for every good or service that is going to be purchased by a public institution,

ENG: [Journal problems]... funding, lack of policy, and the political problem; the contractor law that poses thousand obstacles to suppliers and has administrative rules as simple as having to request three quotes [bid]. In addition, all publishing supplies are imported and expensive.

SPA: *[Problemas de las revistas]... financiamiento, falta de políticas, y el problema político; la ley del contratista que le pone mil trabas a los proveedores y corre normas administrativas tan simples como tener que buscar tres presupuestos [licitación]. Además todos los insumos editoriales son importados y costosos.*

At the time of the interviews (2009), there was a controversial presidential decree about luxurious expenditures that caused concern among the interviewees (Decree 6649 of March 24, 2009). Article 2 of the decree considered internet as a superfluous expenditure, which would have been a serious threat to the Venezuelan journals that are trying to migrate to OA electronic publication. That piece of legislation was later repealed and a previous decree about internet as a

national priority was reinstated (Decree 825 of May 10, 2000). The next fragment was a comment of one of the interviewees on this issue,

ENG: We are worried about that, the Presidential Decree that says that internet is luxurious. That is a wrong perspective because the internet has helped the progress of science. It has shortened the publication time plus the discussion with peers from around the world. ... Those are measures that one does not understand because the government needs the internet for information. Therefore, it is not a luxury. ... In addition, the internet is beneficial for ecology because there are not tree massacres anymore.

SPA: *Eso nos preocupa, el decreto presidencial que dice que internet es suntuario. Es una visión equivocada porque internet ha ayudado al progreso de la ciencia. Ha acortado tiempo de publicación, más la discusión con pares en todas partes del mundo. ... Son medidas que uno no entiende porque el gobierno necesita del internet para su información. Entonces, no es un lujo. ... Además el internet es beneficioso para la ecología porque ya no hay la masacre de árboles.*

According to the analytical model developed by Vaira (2004), universities are exposed to pressures from national-states. Current government in Venezuela is developing policies and actions aimed at transforming the country into a socialist state (Meneses Sala, 2011). Traditional public universities have opposed to the reforming policy that is seen as a threat to university autonomy. Recently enacted legislation on S&T (López & Odremán, 2010; República Bolivariana de Venezuela, 2010a) and higher education (Meneses Sala, 2011; República Bolivariana de Venezuela, 2010b; Vásquez, 2010) emphasizes tenets like national sovereignty, pluralism as opposed to capitalist imperialism, research to solve national problems and develop endogenous capacities, and participation of local communities. However, traditional universities see the new legislation and other measures such as the public contract law, the luxurious expenditure law, the budget restriction for universities, and the changes in journal funding and the PEI, as a way to impose the government's ideology. In order to face government pressures and support the development of journals, universities have implemented different strategies that

include emphasizing funding of top journals, migration to open access electronic platforms, and development of institutional repositories.

To summarize, the role of the nation-state enacting reforming policy in Chile, Colombia, and Venezuela has been key in the growth of university journals. The three countries have enacted legislation on S&T and higher education that has been a fertile terrain for the publication of journals. Regarding the existence of journal evaluation and/or funding systems, policy in Chile focuses directly on international standards and the provision of competitive funding. Chilean universities take advantage of existing available funding to assure the sustainability of their journals and position them in international indexes (WoS and SciELO). In Colombia, policy also looks at international standards but is mediated by Publindex that is used to determine salaries as well as a factor for accreditation and competition between universities. In Venezuela, the emphasis is given to the national interest perspective promoted by the current government. Several reforms are currently taking place in Venezuela. The political tensions between the government and universities plus the reforms generate distress among institutions. However, universities try to provide resources necessary to assure the sustainability of their top journals.

4.3.2 Supra category: Regional trends and pressures

The analytical model of allomorphism proposed by Vaira (2004) to study the pressures of globalization on higher education and the responses of universities to those pressures establishes the analysis at the global, national, and local levels. In this study, given the role that regional initiatives have played in developing and giving visibility to LA&C journals, it was considered

interesting to include the analysis of the regional level. During the data analysis, attention was paid to regional indexes and databases as well as other possible emerging topics. As well in previous sections of the results, findings from the interviews have been complemented with information from documents and websites.

At the regional level, it is important to highlight three initiatives that have influenced and boosted the growth and improvement of scholarly/scientific journals in LA&C, including Chile, Colombia, and Venezuela. The first initiative is **Latindex** that was created to be a regional index of academic journals and to set the quality criteria that scholarly/scientific journals must meet. The influence of Latindex is mostly at the national level since the S&T agencies, that is, CONICYT, Colciencias, and FONACIT are in charge of submitting the information of the journals from each country for the directory and the catalogue. It seems that Latindex has lost some relevance in recent times but it is still the main and most comprehensive journal directory in LA&C. The following excerpt of interview mentions two workshops on scientific publications with experts from most LA&C countries that took place in Guadalajara Mexico in 1994 and 1997 to analyze the problems that journals in the region faced. A set of criteria for the evaluation of journals emanated from the workshops and it was agreed to create a directory and catalogue of journals, Latindex, which would be managed by the Universidad Autónoma Nacional de Mexico (UNAM) library system, the same one that still manages two regional indexes, CLASE for journals in the social sciences and PERIODICA in natural and hard sciences (Cetto & Alonso, 1999). Criteria discussed in the workshops were the same of those used in the first journal inventory in Colombia. The next quotation is from an interviewee, who argues that Latindex failed as a cooperation project because it ended up being a journal directory and not an index,

ENG: Latindex was the result of the two Guadalajara seminars where there was agreement about if this was the model to evaluate journals. The indicators, elements, and ways were the same [of the first Colombian project]. We made an agreement in Guadalajara and said, "Let's go ahead." Venezuela quickly assumed it and all Latin America. ... Latindex also failed because it also ended up turned into journal directory. It has the black experience of all the previous regional cooperation projects. We have not learned what a cooperation project is. What CLASE and PERIODICA, the most important journal databases of Latin America in a cooperation system did in the 1960s, failed.

SPA: *Latindex fue el gran resultado de los dos seminarios de Guadalajara, en los que se llegó a un acuerdo sobre si este era el modelo para evaluar revistas. Los indicadores, elementos y maneras eran los mismos. Nos pusimos de acuerdo en Guadalajara y dijimos "vámonos adelante." Venezuela rápidamente lo asumió y toda América Latina. ... Latindex también fracasó porque también terminó convertido en un directorio de revistas. Tiene la experiencia negra de todos los proyectos previos de cooperación regionales. Nosotros no hemos aprendido qué es un marco de cooperación. Lo que hicieron CLASE y PERIÓDICA en 1960, que eran las bases más importantes de revista de América Latina en un sistema de cooperación, fracasó.*

Even though Latindex did not evolve as a journal repository and bibliographic analysis service, its criteria have been used to develop other bibliographic systems at the regional and national levels. They are considered the excellence requirements that every scientific journal should meet.

ENG: [Journals] apply to be included in the Latindex catalogue, even though Latindex is not a content index or database. It is like a bibliographic record of journals. But the catalogue tool, even though it was not created as a measure for evaluation either, serves to say that all journals that are in the directory meet all the excellence criteria of a scientific journal.

SPA: *[Las revistas] postulan a estar en el catálogo de Latindex, aunque Latindex no sea un índice o base de datos de contenidos. Es como un registro bibliográfico de revistas. Pero esta herramienta del catálogo, aunque tampoco fue creada para que fuera una medida de evaluación, sirve para decir que de todas las revistas que están en el directorio cumplen con todos los requisitos de excelencia de una revista científica.*

Chilean, Colombian, and Venezuelan universities in this study have worked to seek the inclusion of their journals in regional and international indexes and databases. Latindex is still considered one of the main references,

ENG: We have been oriented in this school in the last three years towards having our journals indexed. We are already included in indexes like Latindex and now we are going to enter EBSCO.

SPA: *Nosotros nos hemos orientado en esta facultad en los últimos tres años a que nuestras publicaciones estén indexadas. Ya tenemos otras indexaciones como Latindex, ahora vamos a entrar a EBSCO.*

The second initiative is **SciELO**. This journal repository and index was originally created to host biomedical journals but very early in the process it was opened to publications from other fields. SciELO started in Brazil and was followed by Chile and other countries. As well as Latindex, SciELO establishes its relationships at the national level. As it has been described before in this document, SciELO is managed in Chile by CONICYT, in Venezuela by a foundation from the Universidad Central de Venezuela School of Medicine (FUNDASINADIB), and in Colombia by the Universidad Nacional Department of Public Health: 1) In Chile, key journals were chosen to be part of the pilot project. Two of them are Estudios Filológicos and Archivos de Medicina Veterinaria from the Universidad Austral de Chile. That experience made the university decide to develop its own repository based on the SciELO methodology. 2) SciELO Colombia has been criticized by other universities because as soon as the management passed from the PAHO office in Colombia to the Universidad Nacional, journals from that institution were quickly processed (markup) and included in the portal leaving other universities behind. 3) SciELO Venezuela has suffered from the loss of funding from FONACIT since top-

ranked journals used to receive funds for SciELO markup and public universities are struggling with budget deficits and cannot afford to cover the high costs of data processing and website maintenance of SciELO.

SciELO requires specific training on markup. That is why specific units/agencies have assumed the task. As it was described before, CONICYT does it in Chile and specific units within the largest universities in Colombia (Department of Public Health at the Universidad Nacional) and Venezuela (FUNDASINADIB at the Universidad Central). Specific personnel are hired to do the markup for SciELO. The demand for this service rises as more journals apply to be included in the repository. It also increases the costs. The next excerpt from Chile illustrates the issues of costs and demand for staff,

ENG: We coordinate SciELO. We do the markup even though some editors hire external personnel. ... The million [dollar or peso] question about funding for SciELO: we have grown and stagnated. We do not have enough personnel and the demand is growing.

SPA: *Somos coordinadores de SciELO. Hacemos la marcación aunque hay algunos editores que contratan personal externo. ... La pregunta del millón por el financiamiento de SciELO: hemos crecido y nos hemos estancado. No tenemos suficiente personal y la demanda es cada vez más.*

As it was mentioned in the section about institutional actors participating in and or providing support for the publication of journals, several university libraries in the study do the SciELO markup for the institutions' periodicals. Journals included in the SciELO repository/index are recognized by the journal evaluation systems in Colombia and Venezuela. Likewise, publications in SciELO journals are accepted in the university professor salary systems in the three countries. However, one of the interviewees is concerned about issues of power with SciELO and the stubbornness of its leader to make the system evolve according to

the new technologies and trends about access and management of information. This interviewee mentions Eugene Garfield, one of the founders of bibliometrics and scientometrics, and the founder of the Institute for Scientific Information (ISI) (Cawkell & Garfield, 2001).

ENG: [Abel] Packer wants to be the czar, the local Eugene Garfield. The guy said he is not going to modernize the software but internet is demanding more flexibility, open access, more open codes, but they do not want to drop the ball. He is going to be left alone with a serious loss of the PAHO library.

SPA: *[Abel] Packer quiere ser el zar, el Eugene Garfield local. El tipo dijo que el software no lo va a modernizar, pero resulta que el internet está pidiéndonos más flexibilidad, acceso abierto, más códigos abiertos, pero ellos no quieren soltar la pelota. Se va a quedar sólo con la grave pérdida de que la biblioteca OPS se va a perder.*

Another interviewee mentions the competition that exists between the initiatives from Brazil and Mexico, SciELO and Latindex. Both work at the national level with government S&T agencies or organizations representing the countries. He/she also expresses his/her concerns about the high costs of maintaining SciELO,

ENG: dynamics and competition between the international groups of Latindex and SciELO. Latindex appears earlier. SciELO enters aggressively and with a strategy towards health sciences and continues with other areas. Some problems emerge because the SciELO platform and the formats of some journals are very expensive. That is why there is a great misbalance between Brazilian journals and the rest of the region. Both work with the countries and must reach an agreement.

SPA: *...dinámicas y las competencias entre los grupos internacionales de Latindex y SciELO. Latindex surge antes. SciELO entra con agresividad y con estrategia hacia el área de la salud y sigue a otras áreas. Se generan problemas porque los formatos que exige SciELO y los que tienen algunas revistas los hace muy costosos. Por eso hay una gran desproporción entre la cantidad de revistas de Brasil y el resto de la región. Ambos trabajan con los países y se deben poner de acuerdo.*

The third initiative, RedALyC, emerged from a group of scholars/researchers from the Universidad Autónoma del Estado de México School of Political Science and Public

Management. They were worried about the lack of access to research from and about LA&C in the social sciences. RedALyC works not only with country representatives and government agencies but also with institutions. It started as a journal repository and is evolving into an indexation and information analysis service (RedALyC, 2008). Recently, RedALyC has been developing a map/atlas of science that is useful to carry out scientometric studies. An initiative like RedALyC is useful to support projects aimed at promoting national research and publications. For instance, RedALyC, in a partnership with the journal index REVENCYT, recently developed the Venezuelan portal and scientometric atlas. In addition, REVENCYT pledged to keep updated Venezuelan journals in RedALyC (REVENCYT, 2011; Universia, 2011).

ENG: It could be hypothesized accurately that publishing projects are emphasizing efforts to avoid the closure of journals. It is important to mention the alliance between RedALyC and the Universidad de Los Andes that can help editors to save energy and position what is there [journals]. I interpret from the words of a representative of RedALyC that they know that the situation of science in Venezuela is severe and delicate.

SPA: *Se puede hipotetizar con un buen margen de certeza que los proyectos editoriales están dedicando sus esfuerzos a impedir el cierre de las revistas. Habría que mencionar la alianza de RedALyC con la Universidad de Los Andes, la cual puede ahorrar algunos esfuerzos a los editores y posicionar y proyectar lo que hay. Según interpreto de lo dicho por un vocero autorizado de REDALYC, ellos saben que la situación de la ciencia en Venezuela es grave y delicada.*

The previous interviewee saw the RedALyC-REVENCYT agreement as a response to the funding crisis that Venezuelan journals have faced in recent years. However, unlike Chile and Colombia that have not included RedALyC in the journal funding/rewarding and evaluation systems yet, Venezuela recognizes this Mexican initiative in the Research Promotion Program,

ENG: The PPI has become more flexible with the criteria to include journals. In the past, it was only the SCI. Since 2000, other indexes such as RedALyC and Latindex

are accepted, therefore, the number of researchers aspiring to be included in the PPI has increased.

SPA: El PPI ha ido flexibilizando los criterios para inclusión de revistas. Antes era solo el SCI. Desde el 2000, se aceptan otros índices como RedALyC y Latindex entonces el número de investigadores aspirantes al PPI ha aumentado

Chile only recognizes WoS and SciELO for the monetary bonuses that the government gives to universities for publications in indexed journals. On the other side, Publindex in Colombia does not include RedALyC as an indexation service. In both cases, it is valued as a repository. This could be explained in two ways. First, the evolution of RedALyC towards becoming an indexing and bibliometric/scientometric analysis service has taken place mostly in the last five years. Second, the criteria of the publication rewarding system in Chile and Publindex in Colombia were established when RedALyC was still a journal repository. The next quotation from an interview conducted in 2009 serves as indication for this argument,

ENG: At this point, what do we see as a perspective of an information service? RedALyC, a Mexican initiative, more democratic, more participatory, that does allow you [have] some kind of ranking but that it is not its main purpose. Its objective is to be an information service, to have full texts, and to make Latin American science circulate. We are betting on that at this time.

SPA: En este momento, ¿Qué es lo que vemos como perspectiva de servicio de información? RedALyC, una iniciativa de los mexicanos, más democrática, más participativa, que sí te permite un cierto tipo de ranking pero que ese no es su objeto central. Su objeto es ser un servicio de información, tener textos completos y que la ciencia latinoamericana circule. Esa es la apuesta que estamos haciendo ahora.

It is important to highlight here the development of alliances between RedALyC and national agencies and international organizations. For example, RedALyC also created a partnership with the Latin American Council of Social Sciences (CLACSO) to comprise a link to its wide and diverse collection. The CLACSO repository includes a wide range of periodical

publications and documents, not only scholarly/scientific journals. The following fragment of an interview conducted before the RedALyC–CLACSO alliance happened called for attention on that aspect,

ENG: RedALyC has progressed a lot. There is also CLACSO that has some journals that are neither in RedALyC, nor SciELO, nor Latindex. They are also covering more hybrid sectors, not only basically academic [publications].

SPA: *RedALyC ha avanzado mucho. También está CLACSO que tiene algunas revistas que no están ni en RedALyC, ni en SciELO, ni Latindex; ellos están cubriendo también sectores más híbridos, no sólo las [publicaciones] básicamente académicas.*

In summary, regional initiatives such as Latindex, SciELO, RedALyC, and CLACSO are playing an important role in the development of journals in Chile, Colombia, and Venezuela. They serve as repositories, directories, indexes, and/or services for scientometric analysis. The next fragment of interview shows how they embody a response from the region to global pressures that are represented by international indexes. The interviewee notes that the development of these regional initiatives made companies like Thomson Reuters pay attention to LA&C,

ENG: Mr. Eugene Garfield with his ISI. With all what happened in the 1990s, it was clear that the only option was to create alternative information systems outside ISI, and that we had to create them and to start pushing in that direction. Latindex, SciELO, and RedALyC emerge. Then, those people [Thomson Reuters] shows up and came [to the South] to negotiate here. And finally, a university as important [as ours], we finally have ISI here, at a cost that is still prohibitive...

SPA: *Don Eugene Garfield con su ISI. Con todo lo que pasó en los noventa, quedó clara la conciencia de que la única manera era crear sistemas alternos de información, por fuera de la esfera del ISI y que teníamos que crearlos y empezamos a empujar en esa dirección. Aparecen Latindex, SciELO, RedALyC. Entonces esta gente aparece inmediatamente y bajó a negociar aquí. Y ahora por fin, una universidad tan importante [como la nuestra], por fin tenemos ISI aquí, a un precio que aún sigue siendo prohibitivo...*

In the next section, these and other global pressures and trends will be analyzed in more detail.

4.3.3 Supra category: Global trends and pressures

The analysis of findings started identifying what the Chilean, Colombian, and Venezuelan universities included in this study do to support and promote their scholarly/scientific peer-reviewed journals. In a second step, the analysis of the national context provided some insight of how the political environment and the organization of the S&T and higher education systems have influenced the growth of journals in the last two decades. Later, the analysis moved to describe regional initiatives that have been created to increase the visibility and quality of LA&C journals. The present section looks at the global pressures and trends showing some discussions and tensions, in terms of the Vaira's (2004) allomorphism model, between converging forces (mainstream publication, lingua franca, natural sciences' paradigms, etc.) and diverging responses (regional and local publication, local languages, social sciences' paradigms, etc.) around journal publication. This section includes five main categories: publication formats, role of international organizations, journal scope, language of publication, and imposed paradigms.

In general, the components of the model developed by Vaira (2004), which are, world economy competitive structure, knowledge-based competition, universities as knowledge producers and deliverers, world polity constitutive structure, international agencies, nation-state reforming policy, and individual institutions, can be identified and analyzed in terms of journal publication. The inclusion of the regional level of analysis creates a bridge between the global

and the national and local levels. In addition, not only the higher education system is involved in the publication of journals; it also includes the science, technology and, the more recent trend, innovation.

4.3.3.1 Open Access electronic versus print publication

In the university policies, arrangements, and actions to support and promote the publication of journals section of this document, the migration from print publication to **electronic publication** in the internet was discussed. It is a global trend that is also taking place at all the universities included in this study. As electronic publication increases, print circulation tends to decrease. It is considered an alternative to enhance the visibility of journals published in local languages, Spanish in the case of Chile, Colombia, and Venezuela, and to reach wide potential readers worldwide,

ENG: Nowadays, the challenge is how to turn a [print] journal into an electronic journal, maintaining some print circulation. Because it is a journal in Spanish, it has a limit of visibility and the way to reach it is penetrating the web.

SAP: *Hoy día, el desafío está en cómo convertir la revista en una revista electrónica, manteniendo algo el papel. Por ser una revista en castellano tienen un tope de visibilidad y la manera de alcanzarlo es penetrando en la web.*

However, electronic publication *per se* does not guarantee access to readers. It is complemented and potentiated with the **Open Access** movement to information, which promotes the elimination of fees or charges to access knowledge through the internet. OA is also a global trend that constitutes an alternative to commercial publication. Thus, print circulation of journals is decreasing due to OA electronic publication. It does not completely replace print journals since editors still send copies to libraries, a few subscribers, university authorities, and those who

still like to have a hard copy of a publication in their book shelves. As an informant argues, “*es un asunto de cultura*” [it is a cultural issue]. The following is another example from a journal in Chile,

ENG: Circulation is 250 since last year. It was 300 before. Between 70 and 80 [copies] go to the library. 10 to 15 go to authorities such as the dean and the rector. One goes to CONICYT and another one to ISI. There are very few subscriptions; it is not used anymore due to open access. It has been seen in other journal experiences in Chile. There are still people at the school who like to have a hard copy of the journal in the bookshelf.

SPA: *El tiraje son 250 revistas desde el año pasado. Anteriormente eran 300 revistas. Entre 70 y 80 van a la biblioteca. 10 a 15 van a autoridades, como el decano y el rector. Una va al CONICYT, y otra al ISI. Hay muy pocas suscripciones pues casi no se usa por el open access. Se ha visto en otras experiencias de revistas en Chile. Todavía hay gente en la facultad que le gusta tener la revista en la biblioteca en papel.*

The **regional journal repositories** SciELO and RedALyC are initiatives that have taken advantage of the benefits of OA. The following quotation confirms what is said here and in the previous paragraph,

ENG: The circulation is 500. It used to be 2000 and later 1000. I brought you a report of where we send our journal. We have a few subscriptions because SciELO is online.

SPA: *El tiraje son 500. Eran 2000 y después 1000. Te traje un informe de a dónde enviamos nuestra revista. Tenemos pocas suscripciones porque SciELO está en línea.*

The migration from print to electronic publication is challenging the way publication of journals has been in the past in the countries studied here and the rest of the world. The model based on printing and subscription sales might no longer be appropriate. The model that seems to be emerging here is university unit-based OA electronic publication funded by institutions and in some cases, public monies. It appears that if university press units keep thinking of printing and selling journals, they are going to be left apart. In fact, it was mentioned in several interviews

that the role of presses in the publication of journals tend to be limited to technical aspects, not meaning that they are not important but other processes are being developed by other actors, including journal editorial committees, libraries and ICT offices. Who knows if the market for journals in LA&C was large enough before? The following excerpts highlight two advantages of OA electronic publication. First, it expands the potential audiences of journals from specialized circles to broader readership. On interviewee says, “*La revista impresa es muy bonita pero tiene muy poco impacto porque queda guardada*” [Print journal is very pretty but it has low impact because it is left stored]. Second, as it has been mentioned throughout the findings, OA electronic publication reduces costs and helps overcome problems of distribution and commercialization. This is what another interviewee argues,

ENG: I believe that the trend is to go to the journal electronic format; there will only be a few copies to send to libraries, academies and indexes. That takes us to change the way we see journals. ... An advantage of the electronic format is that it increases visibility because the print is only read by peers and at the areas where a journal circulates, either through exchange and subscription. It limits journals to a specialized circle. ... There is also a budget factor. If funding is lost, electronic publication lowers costs.

SPA: *Creo que la tendencia es ir al formato electrónico de las revistas; solo quedarán algunos ejemplares para enviar a bibliotecas, academias e índices. Ello nos lleva a cambiar la forma como vemos las revistas. ... Una ventaja del formato electrónico es que permite visibilidad, porque el físico solo lo leen los pares y las áreas donde se divulga la revista, por canje y suscripción. Limita las revistas a un círculo especializado. ... También hay el factor presupuestal. Cayendo el financiamiento, la publicación electrónica puede bajar los costos.*

As it has been described, in the last two years Venezuelan journals have faced budget constrains because the government funding that had been provided by FONACIT to the top journals in the national journal list was suspended. The following informant emphasizes the value of electronic publication for the sustainability of journals under those circumstances,

ENG: We perceive a reversal from the government because FONACIT that used to partially subsidize some refereed journals from the LUZ, it is not currently doing it. CONDES is the only one remaining and we are trying with great difficulty to definitely convince the editors that the only way of sustaining the journals in the future is through electronic [publication].

SPA: *Percibimos un retroceso por parte del gobierno porque el FONACIT que subvencionaba parcialmente algunas revistas arbitradas de la LUZ hoy en día no lo está haciendo. Solo queda el CONDES y con mucha dificultad, estamos intentando ver si los editores se convencen definitivamente que la única vía de sostenimiento a futuro es la vía electrónica.*

Electronic publication not only benefits **audiences** but also **journal management** because it breaks boundaries. With the current trend to have board members and referees external to the publishing institution, electronic publication and management allows to connect people located at long distances from each other. The next example of a journal from Chile, support this argument,

ENG: Cinta de Moebio is a journal from the school, not the department. It has always had the same editor. [He] is finishing his postdoc in Manchester and since it is an electronic journal...

SPA: *Cinta de Moebio es una revista de la facultad, no de departamento. Siempre ha tenido el mismo editor. [Él] está terminando su postdoc en Manchester y como es una [revista] electrónica...*

Journals have also benefited from some initiatives developed to support journal management. One of the most prestigious is the PKP's OJS software that manages manuscript submission, peer-reviewing, and publication. University journals in the three countries use OJS not only to publish and manage their journals but to create institutional repositories. The next is an excerpt from an interview conducted in 2009,

ENG: There is a person who is going to work in a second pilot with OJS with a couple of journals, because we cannot start using software without knowing all its

characteristics and its possible impact. It manages authors, peer-reviewers, everything electronically. We have to do it carefully to make sure the thing works really well.

SPA: Ya hay una persona que va a trabajar en una segunda prueba piloto con OJS con un par de revistas, porque no podemos meternos a usar un programa sin saber todos los aspectos y el impacto que pueda tener. Se manejan autores, evaluadores, todo electrónico. Hay que ir con pies de plomo para que la cosa funcione realmente bien.

Another interviewee from Colombia talks about the use of OJS in an institutional software,

ENG: At this moment, we already implemented the OJS software. We are doing it as a part of an initiative of the office of the Vice Rector with all the journals of the university in category A [Publindex]. There are nine. The idea is to have only one portal for the journals and include others as they reach category A. Since all journals are gratis in OJS, we are in the process of having all of them there.

SPA: En este momento ya implementamos el software de OJS. Nosotros lo estamos haciendo por iniciativa de la vicerrectoría con todas las revistas de la categoría A de la universidad. Son nueve. La idea que se tiene es tener un portal único para esas revistas y después en la medida que las otras vayan ingresando a la categoría A incluirlas en el portal. Como todas las revistas son gratuitas en el OJS, estamos en el proceso de tener todas las revistas ahí.

One of the interviewees commented about the impact that OJS has had by indicating that the Brazil manages its journals with that software,

ENG: Brazil has it [OJS] incorporated for all the journals, mostly the automatized manuscript management system. We think all journals should have it. We have been doing a pilot for two years. There are many journal interested in having the system and have applied for the competitive fund.

SPA: Brasil ya lo tiene incorporado [OJS] para todas las revistas, sobre todo para el sistema de gestión automatizado de papers. Aunque pensamos que todas las revistas deberían tenerla. Estamos desde hace dos años haciendo el piloto. Hay muchas revistas interesadas de tener este sistema y se han presentado a los fondos concursables.

International indexes like those in the WoS also accept electronic journals and look at the journals' websites to conduct the evaluations. The Thomson Reuters indexes here are important

because they have been considered like the gold standard for journal publication in the world. They use the impact factor (based on the analysis of number of citations) to determine the quality and impact of an author, article, or journal. One of the interviewees sees electronic publication as a way to increase visibility, citations and the impact factor of a journal,

ENG: For the future we are interested in increasing the impact factor, the number of citations, because it is important. Today the impact factor is 1.2 and we want to increase it. We have the advantage of having the journal online. We have signed agreements with other sites and the possibility of authorizing [publishing] full-text journals, repositories.

SPA: *Para futuro nos interesa aumentar el índice de impacto, el número de citaciones, porque es lo importante. Hoy el factor de impacto es 1,2 y queremos aumentarlo. Favorece que la revista esté en línea. Hemos firmado convenios con otros sitios y la posibilidad de autorizar los artículos en formato completo, repositorios.*

Up to this point, it has been mentioned that OA movement has motivated the creation of journal management software like OJS and regional repositories like RedALyC and SciELO. Universities also have created their own repositories for journals and other institutional documents. Several of them have used OJS to create the repositories. Others have utilized other alternatives such as Minga Online by the Universidad Austral in Chile that uses the SciELO methodology and SaberULA by the Universidad de Los Andes in Venezuela that has developed its own model. There are international repositories that were barely mentioned during the interviews. They include the Directory of Open Access Journals (DOAJ) from Lund University in Sweden and Dialnet from the Universidad de La Rioja in Spain. It is also noticeable that most interviewees do not distinguish between electronic journal directories, indexes, databases, or repositories. However, they understand that it is important for journals to be included in the largest possible number of primary and secondary sources of information.

ENG: The library is fundamental for us for the SciELO process. We were also accepted in LiLACS from BIREME last October that is one of the strategies that we have to aspire to climb to category A1 [Publindex], besides all the requirements that we have met about editorial committee, origin of referees, and degrees of peer reviewers. Then we are already in LiLACS, in DOAJ, the goal at this point is Medline.

SPA: La biblioteca para nosotros es fundamental para el proceso de SciELO. Nosotros también fuimos aceptados en LiLACS de BIREME en octubre del año pasado, que esa es una de las estrategias que tenemos para aspirar a la categoría A1, además de todos los requisitos que hemos seguido sobre el comité editorial, origen de los pares evaluadores, de formación de los pares evaluadores. Entonces ya estamos en LiLACS, en DOAJ, la meta en este momento es Medline.

In summary, there are two international trends that are changing the publication of journals worldwide: electronic publication and open access. Universities in this study support OA publication of their journals. There is an understanding that this model increases visibility of journals and their impact and lowers costs. However, some people are still reluctant to abandon print publication. Besides the publication of journals in electronic format, other initiatives have been developed to improve journals, including electronic journal management systems (OJS from PKP) and institutional (Minga Online, Saber ULA), national (REVENCYT), regional (SciELO, RedALyC) and international (DOAJ, Dialnet) journal repositories. In addition, prestigious indexes like WoS accept OA electronic journals.

4.3.3.2 Role of international organizations

Vaira (2004) argues that international organizations such as the World Bank (WB), the International Monetary Bank (IMF), and the Organization for Economic Cooperation and Development (OECD) play an important role in the incorporation, specification, and articulation of the higher education sector in the world polity constitutive structure. In Vaira's model, developing countries experience coercive and mimetic pressures by international organizations,

that is, impositions and imitation of structures in developed countries. When those organizations are financial institutions, they bind loans to the conformity to their requirements. Sometimes, “those requirements are literally imposed if a state wants to become one of the modern and civilized countries and to be politically recognized as such” (p. 491). In this study, two multilateral organizations, UNESCO and PAHO, one foreign aid agency, USAID, and one financial organization, IADB, are mentioned by the interviewees.

The role of UNESCO in promoting the development of S&T in the countries starts in 1964 with a meeting that evaluated the situation of S&T systems in the world. LA&C did not do well but none decision was made after that summit.

ENG: In 1964, UNESCO gathered a group of experts, sponsored by UNESCO and the International Association of Scientific Societies. They conducted a first evaluation of the S&T systems and the first result was that LA&C was very bad. Nothing was done after that. That, at the regional level.

SPA: *Ya desde 1964 cuando la UNESCO reunió un montón de expertos, patrocinado por UNESCO y la Asociación de Sociedades Científicas Internacionales. Ellos hicieron una primera gran evaluación de los sistemas de ciencia y tecnología, y el primer resultado fue que estaba muy mal en América Latina. Nunca se hizo nada. Eso a nivel regional.*

In the 1990s in Sao Paulo Brazil, the PAHO Regional Library of Medicine (BIREME) joined forces with FAPESP to sponsor the creation of an electronic repository of biomedical journals (SciELO). As it has been mentioned, SciELO later expanded to include journals in other disciplines and PAHO decided to withdraw from the project. That was also good because the PAHO withdrawal made possible replenishing national chapters of SciELO. According to an interviewee, those who were working on the model (Abel Packer, Rogerio Meneghini and other) took advantage to continue developing the project,

ENG: The cognitive nucleus of that information service was journals in the medical field. SciELO is very strong in that and SciELO Brazil is terribly strong in that. The problem is that the thing grew and PAHO decided not to continue sponsoring that project. At that juncture, people who were developing this prototype appeared, created a group, and took advantage of the cumulus of data processing done by PAHO and FAPESP, and sold the project to us.

SPA: *El núcleo cognitivo de ese servicio de información fueron las revistas del área médica. SciELO es muy fuerte en eso y SciELO Brasil es terriblemente fuerte en eso. El problema es que la cosa se creció y OPS dijo que no seguía patrocinando ese proyecto. En esa coyuntura aparece esta gente que venía desarrollando este prototipo, se unen y toman ventaja de este acumulado de procesamiento de información que había hecho OPS y FAPESP y así nos vendieron el proyecto a todos*

USAID did not have a direct participation in the development of journals. It was more influential on the creation and development of S&T agencies in LA&C. The next excerpt describes the creation of Colciencias in Colombia with the support of USAID. The interviewee asserts that the development project was a façade for the campaign against the expansion of communism,

ENG: Colciencias appears in 1969 as a collateral initiative of the American contention plan against communism, which is called development policies. Within that [framework] many things were done like technical assistance, technician visit... many of the first masters, specialists, and even doctors were educated within the Alliance for Progress framework, but mostly in technical areas of agriculture, planning... In 1940, there was not a national planning office; everything is created as [part of] the development package. An American policy aimed at creating institutional conditions among Latin American states for an adequate functioning of democracy based on the American political model. That is why it has an implicit or esoteric policy of contention of communism. The Cuban experience was hard... Much of the money used to fund Colciencias during the first decade came from USAID.

SPA: *Colciencias aparece en 1969 como una iniciativa muy colateral del plan de contención norteamericana contra el comunismo que es lo que se llama políticas de desarrollo. Dentro de eso hicieron muchas cosas como asistencia técnica, visitas de técnicos, muchos de los primeros maestros, especialistas e incluso doctores se formaron en el marco de esa alianza para el progreso, pero básicamente en áreas técnicas de agricultura, planeación... En 1940, no había oficina nacional de planeación; todo viene y se crea como [parte d]el paquete desarrollista. Una política norteamericana destinada a crear condiciones institucionales en los estados latinoamericanos, para un*

funcionamiento adecuado de la democracia, basada en el modelo político norteamericano. Por eso tenía esa política implícita o esotérica para contención del comunismo. La experiencia de Cuba era muy difícil... Mucha de la plata con que el estado financió la primera década de Colciencias provenía de USAID.

Regarding the development of S&T in Chile, Colombia, and Venezuela, the IADB plays the role of the WB or the IMF described by Vaira (2004) in the diagram of allomorphic change. In the 1980s, the Bank created a series of development programs for LA&C countries. They included loans and a monitoring and evaluation system. The latter incorporated a number of goals and indicators that each government should meet in order to determine the success of the program. One of the programs was created for S&T and took place in the 1990s. Loans from this program included a component to develop scientific journals and used SCI as reference. Countries should increase their number of publications in that index. The following are the loans that included a scientific publication component: OC-CH 0022 for Chile (IADB, 1992), OC-CO 0134 for Colombia (BID, 1994), and OC-VE 0112 (IADB, 1999). The next quotation describes the case of Colombia. The interviewee makes a critique of the ideology behind the program and shows how the inclusion of SCI indicators posed competitive and coercive pressures on the loan recipient countries,

ENG: All this transformation starts in the 1980s and is the causal relation that I wanted to mention to you. The government restructures research financing through international loans for S&T, what it is called here "IADB loans." There were four. The largest one, if I am not wrong, was the IADB2 loan. That loan restructuring also changes the North American policy. They used to donate money to us, now they are lending money to us, and to do so, the IADB included evaluation procedures as any other financial agency. Now, [there were] unjust loans, as any other development policy, that is, you need money, I lend you but I tell you how, with whom and where to spend the money. Development... Thus, the IADB proposes a series of loan evaluation mechanisms. In the case of S&T loans, the objective was the advancement of knowledge, most of the projects in the 1980s. The IADB thought it was deleterious; therefore it included some kind of knowledge advancement indicators at the evaluation matrix. The first mechanism to evaluate S&T here in the country was ISI, which was adjusted during

the 1980s. Most Colciencias reports include ISI reports. Thus, we started to be concerned because we had very few international publications... Then we started to compete with the number of internationally indexed publications.

SPA: Toda esta transformación comienza en los ochenta y es la relación causal que le quería mencionar. Hay una reestructuración de la financiación de la investigación por parte del estado. Corre por cuenta de los préstamos internacionales para la ciencia y la tecnología, lo que llaman aquí los préstamos BID. Hubo cuatro. El más grande de todos, si la memoria no me traiciona fue el BID2. Esa reestructuración de los préstamos también cambia la política norteamericana. Antes nos regalaban plata, ahora nos estaban prestando plata y al hacerlo el BID tenía unos procedimientos de evaluación como toda agencia financiera. Ahora, préstamos leoninos, como toda política de desarrollo, es decir, usted necesita plata, yo le presto la plata pero yo le digo en qué se la gasta, con quién se la gasta, y donde compra. Desarrollo... Entonces el BID propone una serie de mecanismos de evaluación de préstamos. En el caso de los préstamos de ciencia y tecnología, el objetivo general era el avance del conocimiento, la mayor parte de los proyectos de los ochenta. Al BID le parecía muy deletéreo, entonces sobre esa matriz de evaluación, incluyó algún tipo de indicadores de avance del conocimiento. El primer mecanismo para evaluar la ciencia y la tecnología es el ISI aquí en el país. Eso se fue acomodando a lo largo de los ochentas. Casi todos los reportes de Colciencias de los ochenta traen reportes ISI. Entonces empezamos a darnos golpes de pecho porque tenemos muy poquitas publicaciones internacionales... Entonces comenzamos a competir con el número de publicaciones indexadas internacionales.

In summary, international organizations have played an important role in the growth of journals in Chile, Colombia, and Venezuela. As mentioned by the interviewees, UNESCO has served as a convener for diagnostic summits; PAHO was one of the sponsors in the first stages of the SciELO project; USAID provided financial support for the creation of S&T agencies like Colciencias in Colombia in 1969; and the IADB created a series of programs that including S&T loans and development goals. Scientific journals are part of the strategy, even though pressure is imposed on the countries when establishing mainstream indexes like SCI as a reference.

4.3.3.3 Mainstream versus local publication: Exogamy or endogamy?

One of the main terms that emerged from the data is **visibility**. Journals need a wide basis of readers, authors and referees. In order to achieve it, they need to be positioned in prestigious bibliographic services (directories, indexes, and repositories). If in the past, it was very difficult for a journal to be included in mainstream indexes, now there are many bibliographic services by thematic fields or generalists, and by region or more international where they can be. Besides helping publications be more visible, those services function as accrediting services. So far, the presentation of findings has included national services like CONICYT in Chile (not a bibliographic service per se but it uses the indexes that are accepted by the government), Publindex in Colombia, and FONACIT in Venezuela (even though it has been suspended for a couple years). It has also covered regional journal directories like Latindex; indexes like LiLACS, CLASE and Periódica; repositories like CLACSO; and repositories that are starting to incorporate bibliographic analysis like RedALyC and SciELO. In the previous section, it was described how SCI has been used as the gold standard for the evaluation of loans from the IADB S&T program. SCI is one of the main indexes that comprise the Thomson Reuters' WoS. They and the publications they include are known as **mainstream** (in Spanish, *corriente principal*). Thomson Reuters is a corporate publisher. It could be considered, in Vaira's (2004) terms, as an actor where the world polity, that is, the world's main science, and the world economy converge.

However, there is also a global alternative that is represented by the OA movement and pushes for the democratization of knowledge (Willinsky, 2006). Today, journals can be published in OA formats and to be included in OA repositories and databases. The regional initiatives, SciELO, RedALyC and CLACSO, are published in OA platforms. There are also more global projects like Ulrich's, DOAJ and Dialnet, to mention a few. The number of primary

and secondary information services is growing and a journal can be included in as many as it can, regardless that, for instance, in Chile the only ones that are accepted for bonuses are WoS and SciELO. The more directories and databases a journal is in, the more visible it becomes. That is why the strategy of some universities is to promote the inclusion of journals in many of these services.

ENG: Let's see now the operative parts: Publindex, national indexation; international indexations that we work in partnership with the library and editors trying to be in the largest number possible of indexes, bibliographic databases, and directories (there are three levels) related to each field of knowledge. We have obtained the information about sites by field to increase visibility. There is an organization in Argentina called CAICYT that made a list of more than 300 databases. Our first step was to consult it. Some of the directories are Ulrich's and Latindex. We have to be there. Bibliographic databases have selection committees but they are not as demanding [as indexes]. They include RedALyC and SciELO that are also repositories. But they do not do citation analysis or bibliometric analysis. RedALyC and SciELO are just starting. There are also a number of little databases by knowledge field; we have to look for them and get in them. For instance, Theology has other kinds of repositories. It is like looking for the meaning of the journal within a knowledge field to position it there in order to not to lose its essence.

SPA: *Ahora entremos en las partes operativas: Publindex, indexación nacional; indexaciones internacionales, que trabajamos en conjunto con la biblioteca y editores, que es tratar de estar en el mayor número de índices, bases bibliográficas y directorios (son tres niveles), que sean acordes con el área de conocimientos. Hacemos levantamiento de información de lugares por área de conocimiento para aumentar visibilidad. Hay una organización en Argentina que se llama CAICYT que hizo un listado de más de 300 base de datos, consultarla fue uno de nuestros primeros pasos. Entre los directorios están Ulrich's y Latindex. Ahí hay que estar. Las bases bibliográficas tienen un comité de selección pero no son tan exigentes. Incluyen RedALyC y SciELO, que hacen como repositorios. Pero no hacen análisis de citas y bibliometría. RedALyC y SciELO ya están comenzando. También existe una cantidad de basecitas por áreas de conocimiento; hay que buscarlas y entrar en ellas. Por ejemplo, teología tiene otras clases de repositorios. Es como ir buscándole el sentido a la revista en el área del conocimiento para posicionarla desde ahí y para que no pierdan la esencia.*

WoS is also used as an indicator for **university rankings** like Shanghai and Financial Times. Some of the interviewees complained about restricting the value of journals to their

inclusion in the WoS. It is considered the gold standard but is not representative of the universe and quality of publications. Rankings serve as means to pose pressures for competition on universities in the knowledge-based economy in Vaira's (2004) terms.

ENG: Latin America must be in ISI because there are some indicators of Shanghai and Financial Times to be included [in the ranking], otherwise our universities do not exist. They come and tell us that we have to give our knowledge to Thomson but they come later to sell us their database. I wish there were in the future not only ISI indicators for Shanghai and Times... to look at DOAJ, Scopus and other thousand repositories, to determine indicators of quality and for the world's education.

SPA: *Latinoamérica tiene que estar en ISI porque hay unos indicadores de Shanghái y Financial Times para aparecer [en los rankings] si no nuestras universidades no existen. Vienen y nos dicen que tenemos que entregar nuestro conocimiento a Thomson pero ellos vienen luego y nos venden la base de datos. Ojalá existieran en el futuro no solamente los indicadores de ISI para Shanghái y Times... que mirara DOAJ, Scopus y mil repositorios más, para determinar los indicadores de calidad y para los procesos de educación del mundo.*

The following paragraph adds two elements to this argument: First, the salary element about the importance of bibliographic services to increase journal visibility and recognition. Some universities have had the discussion on which indexes recognize to allocate salary bonuses or incentives. The second element is the value given to local knowledge,

ENG: I could not pass over the professors. The mediation: after many presentations at the offices of the Vice Rectors, I got them to understand that ISI and Scopus are very strong but they do not recognize our knowledge. Therefore, we had to do an analysis of our productivity including SciELO and RedALyC.

SPA: *Yo no podía pasar por encima de los profesores. La mediación: después de muchas presentaciones a las vicerrectorías, logré que ellos entendieran que ISI y Scopus son muy fuertes pero no reconocen nuestro conocimiento. Entonces había que hacer un análisis de nuestra productividad incluyendo SciELO y RedALyC.*

Another term that has circulated in the interviews is **exogamy**. The national, regional, and global bibliographic systems require journals to include certain percentages of editorial board

members, manuscripts, and peer reviewers from institutions external to the one that houses a publication, and it is desirable if they are international. That is what they call exogamy. In this context, national and regional systems borrow indicators of exogamy from mainstream systems. However, and in accordance with what was expressed in the previous excerpt, some see endogamy when the mainstream services require journals to cite journals from the same index,

ENG: ... imposed external paradigm demanding exogamy. It only counts for ISI, citations of ISI journals. The impact factor is not real. Those indexes are endogamous.

SPA: ... *Paradigma externo impuesto exigiendo exogamia. Solo cuentan en ISI las citas de ISI. El factor de impacto no es real. Esos índices son endogámicos.*

The pressure for exogamy is changing the meaning of local journals. As it has been described, most journals in Chile, Colombia, and Venezuela are published by academic units within universities. Many of those publications started as projects to disseminate the scholarly work of their faculty and students. They represent a center, school or university (institutional journals). With the imposed requirements of indexation and exogamy, journals are losing that essence to become entities external to the institution. They are being pressured to work like journals from academic associations where the indication of exogamy makes more sense due to the diversity in membership. The next paragraph describes how an editor of a school journal in Colombia is reluctant to make his publication more exogamous because it would lose its essence,

ENG: The editor of the journal of the [School of] Medicine does not agree with having his publication in a category higher than B [in Publindex] because it will lose its essence and will no longer be an institutional journal. To ascend [in the index], it should increase its exogamy. The same thing happens with [the journal...]. He wants to show the research of graduate students and faculty. That is an issue that I do not discuss. What I fight for is to play to be more visible. We have done so.

SPA: *El editor de la revista de medicina no está de acuerdo con que su revista está indexada en una categoría más alta que B porque pierde su esencia en el sentido de que deja de ser institucional. Para subir, debe aumentar su exogamia. Así pasa con [la*

revista...]. Él quiere mostrar los trabajos de los estudiantes de posgrado y los profesores. Es un tema con el cual yo no peleo. Lo que yo si le peleo es jugar a visibilizarse. Hemos logrado hacerlo.

Another discussion that emerges from the interviews is how the focus on indexation is guiding decision-making and influencing actors at different levels. It affects university research and rankings; however, knowledge and who benefits from it are left apart,

ENG: I think that within the university we are trapped by the indexations. The office of the Vice Rector for Research is where [professors] take their published articles and there is a fund for publications. Similarly to what CONICYT does, they do not approve your final report until you have a publication. In the case of the university, it has to be an indexed journal. I think that ISI and SciELO are conducting our academic work. The university is also trapped in the rankings where SciELO and ISI publication count. You enter the database and type “Universidad de Chile” and get the list. Those are the ones that allow to measure quality. I do not know if other systems allow to measure quality. Thus, we are locked in indexation.

SPA: *Pienso que dentro de la universidad, estamos atrapados dentro de las indexaciones. A nivel de la vicerrectoría de investigaciones, además de ser dónde se llevan los papers, también hay fondos para las publicaciones. Siempre están ligados a un producto que son las publicaciones. Así como lo hace CONICYT, no te aprueban el informe final hasta que no tienes la publicación hecha. En el caso de la universidad tiene que ser una publicación indexada. Creo que ISI y SciELO son los que están marcando nuestro quehacer académico. La universidad también está atrapada en esto por aquello de los rankings, en los que cuentan las publicaciones en SciELO e ISI. Tú entras a las bases de datos y escribes “Universidad de Chile” y te sale el listado. Son las que permiten medir la calidad. No sé si los otros sistemas permiten medir la calidad. Entonces nosotros estamos encasillados en la indexación.*

The Thomson Reuters’ WoS is the most visible mainstream index but not the only one. Another index, Scopus, published by Elsevier has grown very quickly lately and gained relevance. Currently, its journal database doubles WoS’. One of Scopus’ strategies was to acquire the Atlas of Science developed by the SCImago group (Grupo SCImago, 2006; SCImago, 2011). Their competition is for clients for the databases, another element of the knowledge-based economy.

ENG: [The gentleman from SCImago Scopus] went to the Ministry of Education (MEN) and moved throughout all the institutions showing the model of the atlas of science... that draws much attention. In fact, ISI is worried about it. SCImago tried to sell it to ISI but they did not want because they wanted to develop it themselves before hiring somebody to do it, which is what they ended up doing. Last year, ISI tried to sell it to the MEN but they did not buy it. Colombia bought Scopus. Colombia has a consortium between Colciencias and the universities to have access to the databases, like what Brazil did with Qualis. But they do not know how to negotiate. ... The gentleman from Scopus entered in his role of consultant for being an academican to sell his product. He manages to make that the product he sells become policy. Colciencias tried to negotiate with the MEN to not to have to serve God and Evil. ... Now Colciencias has to decide what to do. One of the possibilities is to create the Colombian ISI with scientometrics and [with the help of] the Colombian Observatory of S&T (OCyT). The contract between Scopus and the MEN already finished.

SPA: *[El señor de SCImago Scopus] llegó al MEN y se movió por todas las instituciones mostrando el modelo del atlas de la ciencia... que llama mucho la atención. De hecho ISI está preocupado por esto. SCImago intentó vendérselo a ISI pero no quisieron porque ellos querían desarrollarlo ellos mismos antes de contratar una persona para que lo hiciera, que fue lo que terminaron haciendo. El año pasado, ISI trató de vendérselo al MEN y no se lo compraron. Colombia compró Scopus. Colombia tiene un consorcio entre Colciencias y las universidades para tener acceso a las bases de datos, como hizo Brasil con Qualis. Pero ellos no saben cómo hacer la negociación. ... El señor de Scopus entró con su papel de consultor por ser académico para vender su producto. Él hace que al vender su producto se convierta en política. Colciencias trató de negociar con el MEN para no tener que servirle a Dios y al diablo. ... Colciencias ahora tiene que decidir qué van a hacer. Una de las posibilidades es crear el ISI de Colombia con la ciencia métrica y el OCyT. El contrato con Scopus y el MEN ya se acabó.*

This section has introduced three themes about the global pressures and trends around the publication of journals in Chile, Colombia, and Venezuela. The first theme is the need of journals to become visible, which they can accomplish through their publication in OA electronic formats and their inclusion in several repositories and bibliographic analysis services that are growing in number. The second theme is the pressure for exogamy, which turns local journals into internationally oriented publications. Criteria of inclusion in national, regional, and more international indexes are imposing one management and publication model to all journals. It is recognized that the quality and management efficiency of most journals has improved but they

have had to sacrifice some autonomy and essence in order to gain presence. The last theme is the craze about indexation that seems to have become the end and not the means in the communication of research and scholarly work. It is now a factor to obtain funding, to be included in university rankings, and to assign salary.

4.3.3.4 Language of publication: Lingua franca or local language?

The issue of language of publication was not much discussed in the section of university policy, arrangements, and actions. However, it is an issue that touches most journals and is affected by the current trends in scholarly/scientific publication. Most of the Chilean, Colombian, and Venezuelan journals are published in Spanish. However, national, regional, and more international indexes and other bibliographic services require journals to include at least titles, abstracts, and keywords of articles in English. In addition, journals published using platforms like OJS and SciELO are encouraged or asked to include all relevant information about the publications (mission, policy, scope, instructions to authors, etc.) in the original language and English. Discussion on what language should a journal be published is usual. On the one hand, publication in English opens the doors to a global readership and globally relevant topics could have a wider impact if they were published in English. On the other hand, local audiences not necessarily read or write in English and some topics can be more relevant in local than global contexts. Given this dichotomy, journals have taken different paths. This is a fragment of interview conducted in 2010 with the editor of a journal on urban studies that represents a trend regarding language of publication,

ENG: We publish [articles] in Spanish and Portuguese. Starting in 2011, it is likely that we will include articles in English. The template of the website is ready to include instructions to authors, abstracts, and other information in English. There are

several options like translating the articles, accepting articles in English, or picking the best article and translating it. Each option has pros and cons. Off course, to have an article in English opens the scope to a larger number of potential readers. It has the risk that the journal *Urban Studies* that is the gold standard, publishes in English. Why would anybody with an article in English like to publish it in EURE? We have received a few articles in English. There are professors opposed to it, others accept it. What we do not want to do is to force it. To receive articles rejected by another journal... The policy would be publishing a good article and deciding if it is done in English or translate it. Under discussion...

SPA: Publicamos en castellano y portugués. A partir del 2011 es probable que incluyamos artículos en inglés. Esqueleto de la página web ya está listo para incluir indicaciones a los autores, resúmenes, y otra información en inglés. Hay discusiones en el comité editorial sobre el inglés. Varias opciones son traducir los artículos, otra recibir artículos en inglés, otra escoger el mejor artículo y traducirlo. Cada opción tiene pros y contras. Claro, tener un artículo en inglés abre el espectro a mayor número de gente que lo va a poder leer. Tiene el riesgo de que la revista Urban Studies que es el gold standard, publica en inglés. ¿Por qué alguien con un artículo en inglés va a querer publicarlo en EURE? Han llegado unos pocos artículos en inglés. Hay profesores que se oponen y otros lo aceptan. Lo que no queremos es forzarlo. Recibir artículos que ya fueron rechazados en otra revista... La política sería publicar un artículo de calidad y decidir si se deja en inglés o se traduce. En discusión...

The following fragment from the same interview adds the language element to the previous discussion about the pressures of indexation. It is particularly relevant in very specialized areas,

ENG: The other thing was to become part of mainstream science. They impose you some processes that are a little bit forced, like the peer-reviewing. Spanish-speaking experts in urban studies are not too many. The few that exist are referees of all the journals. They repeat. There is not an expert in each topic for each issue. What helps EURE is that it is well-positioned in the indexes.

SPA: Lo otro era entrar a una corriente científica. Te imponen algunos procesos que son un poco forzados, como el tema del arbitraje. Los expertos en castellano en temas urbanos no son muchos. Los pocos que hay son árbitros en todas las revistas. Se repiten. No hay un experto en cada tema para cada revista. Lo que ayuda a EURE es que está bien posicionada en los índices.

A few journals have become bilingual, which generates new demands like finding bilingual experts in the topics. The next quotation shows the goals of a journal regarding bilingual publication. However, at one moment they will have to evaluate all the issues of assuming this kind of publication such as the existing capacities,

ENG: We turned into a bilingual journal with two columns, one in Spanish and one in English. ... We applied for CONICYT funding and got it. We also receive money from this department. We hired a bilingual editor that knows how to translate the articles and about the topics. [The chief editor] also reviews that editor's translations. ... This is temporary because when the journal grows, we are going to have the privilege of asking the authors to provide manuscripts in the two languages. To have a translator expert in all the topics is impossible. It is important to have a bilingual journal is important but most of our topics a regionally relevant.

SPA: *Nos saltamos a una revista bilingüe con dos columnas, una en español y una en inglés. ... Postulamos a CONICYT para el proyecto y nos lo financian. También obtenemos dinero de este departamento. Contratamos un editor bilingüe que pueda traducir los artículos y sepa del tema. [El editor general] también revisa la traducción de este editor. ... Esto es temporal porque cuando la revista crezca, nosotros nos vamos a dar el lujo de pedir a los autores enviar los artículos en los dos idiomas. Tener un traductor que sepa de todos los temas es muy imposible. Tener la revista bilingüe es importante, pero la mayor parte de los temas tienen relevancia regional.*

It would be ideal to publish a journal in two languages in order to reach wider audiences. However, it would be necessary to have a clear business plan considering all the costs and processes involved.

ENG: We have thought of publishing in Spanish and English, like a Mexican journal that publishes in two columns, one in English and the other in Spanish. The problem we have is funding because that would double the costs of the journal. In fact, we already discarded the idea for that reason. We accepted to publish articles in English, Spanish, and Portuguese. We think that it would be ideal to publish all articles in English but is very difficult to accomplish.

SPA: *Hemos pensado publicar en español e inglés como hace [una revista] en México que publica a dos columnas, una en inglés y la otra en español. El problema que tenemos es la financiación porque eso en esencia duplicaría el costo de la revista. Y de hecho ya lo descartamos por eso. Se aceptó que se publicarían artículos en inglés,*

español o portugués. Se piensa que si se lograra publicar todos los artículos en inglés sería lo ideal, pero es muy difícil lograrlo.

One thing is to publish a journal in English and another to publish an article in English. Universities have more influence on the latter. The following excerpt show how university authorities consider supporting the publication of professors' articles in English. The reasons are the same presented before, the inclusion in mainstream indexes. That means indicators, rankings, competition, etc.

ENG: ... the Vice Rector is trying to find a way to look for other resources to translate articles into English. They concluded that to have our journals in ISI and Scopus, they must be mostly in English. We have to start publishing in English.

SPA: ... *la vicerrectoría está tratando de ver una manera para buscar otros recursos, para buscar la traducción de los artículos al inglés. Se llegó a la conclusión que para tener nuestras revistas en ISI y Scopus, deben estar la mayor parte en inglés. Tenemos que ponernos a publicar en inglés.*

An argument to support the publication of journals in local languages is usually the lack of English skills of scholars. Another argument is the laziness of researchers to write in English if there are well-positioned journals published in Spanish. University authorities can get involved in these issues as well to developing policy and providing the support necessary for English publication if the institution decides to promote it.

ENG: In many cases, researchers are too lazy to write in English. It is an important limitation. Many authors who publish in our journal are PhDs and could do it in English. Therefore, the idea is to encourage authors of our journal to write in English. The Vice Rector is trying to have a fund that is financed through the School of Foreign Languages. Another option is to have English-speaking referees and proofreaders to take our language to an international level of quality.

SPA: *En muchos casos es la pereza de los investigadores de redactar en inglés. Es una limitación importante. Muchos de los que publican en nuestra revista con PhD podrían hacerlo en inglés. Entonces la idea es motivar a los autores de la revista para que se animen a escribir en inglés. Lo que se propone la vicerrectoría es tener un fondo*

que se financie a través de la escuela de idiomas, otro mecanismo es tener redactores y correctores de estilo en inglés que nos permitan llevar un lenguaje de muy alta calidad internacional.

In summary, language is one of the themes that create tension in the publication of journals. On the one side, there is the need to have a larger international participation by publishing in English and topics of international relevance. On the other side, the growth of publications in Spanish, in the case of Chile, Colombia, and Venezuela, is a response to a series of obstacles and skill and attitude factors plus the relevance of some topics for local audiences. Bibliographic indexes at the national, regional, and global levels promote the inclusion of key information about the journals in English as well as titles, abstracts and keywords for all articles. Journals have tried different strategies such as accepting articles in more than one language and bilingual publications. Both have advantages and disadvantages related to capacities and funding, that editorial committees must evaluate before making any decisions.

4.3.3.5 Imposed paradigms: Natural/basic science or social science/humanities traditions?

The last section of the findings discusses another theme that generates tensions in the publication of journals: the **imposition of paradigms**. The discussion here is about how the models that are used to promote and evaluate journals come from the natural and basic science but not necessarily represent the research traditions in the social sciences and the humanities. In addition, the type of publication that is privileged is the one that communicates research ignoring other types of written intellectual products. The following excerpt from an interview in Colombia shows this tension,

ENG: Sometimes Publindex makes them to lose their essence. Literature cannot stop being literature, for instance, publishing a poem.

SPA: A veces Publindex hace que pierdan la esencia. Literatura no puede dejar de ser literatura, por ejemplo, publicando un poema.

The tension between research traditions and the model of publication imposed can be observed in three scenarios: journal evaluation, evaluation of faculty productivity, and relevance of knowledge. The next quotation represents the tensions in the journal evaluation systems developed in LA&C,

ENG: CONICYT has developed some programs to develop journals. The strongest ones are basic sciences like physics, astronomy, health sciences, and somehow agronomy. The foundations of journal evaluation systems in LA&C based on those disciplines are not very compatible with social disciplines.

SPA: CONICYT ha desarrollado algunos programas para el desarrollo de las revistas. Lo más fuerte son las áreas básicas, como física, astronomía, las ciencias de la salud, algo en agronomía. Los fundamentos de los sistemas de evaluación de las revistas de América Latina basados en estas disciplinas no son muy compatibles con las disciplinas sociales.

The same systems used to evaluate journals are used in universities to evaluate faculty productivity. The following paragraph describes the tension and what is important for social scientists to evaluate their productivity.

ENG: I am attending a university board meeting because there have been problems cataloguing our scholars in the social fields. We have a faculty ladder with four steps and the most difficult to reach are the last two. We realized that the criteria applied to other areas are not the same for us. We decided to analyze what is relevant in the social sciences. We discovered that ISI is important but it is more important for us to generate criteria. We care much about peer-reviewing. That is why we do very well in the evaluation of competitive research projects. The idea was to see how to measure quality in the social sciences. Also to build regional networks like our participation in CLACSO. The question is where to publish and why to publish there. Scholars publish in ISI and other more regional journals. We still write books.

SPA: Voy a participar en el consejo de la universidad porque ha habido problemas en la jerarquización de los académicos de nuestras áreas sociales. Nosotros tenemos cuatro escalafones y los más difíciles de alcanzar eran los dos últimos. Nos

dimos cuenta que los criterios que se aplican a otras áreas, no lo son para nosotros. Nos pusimos a ver qué es lo relevante en ciencias sociales. Descubrimos que ISI es importante pero para nosotros era más importante generar criterios. Nos importa mucho la evaluación por pares. Por eso en la evaluación de proyectos de investigación para concursos nos va muy bien. La idea era cómo se mide la calidad en las ciencias sociales. También construir redes regionales, como nuestra participación en CLACSO. La pregunta es dónde se publica y por qué se publica ahí. Los académicos publican en una revista ISI y en otras más regionales. Seguimos escribiendo libros.

Finally, the last quotation looks at the issues of relevance and visibility in the social sciences when they are going to be evaluated with the criteria of the basic sciences. The interviewee argues that locally relevant topics, proper of the social sciences, are not of interest for mainstream indexes that look for more global topics,

ENG: Basic scientists do not have problem with the model. Social scientists are feeling mistreated because it does not represent them and they are forced to meet criteria that may not be the criteria they have. They are more or less right about that. That is why the commission was called and, without getting rid of the good things that were achieved, is trying to modify the parameter of visibility, because our journals in the social sciences and the humanities still have problems of visibility and relevance. The caricature is horrible but I am going to use it. While an article about “dismemberment techniques with chainsaw in the Bajo Cauca region” can be interesting for a journal in the social sciences, this is not important for an American journal. They can think that is terrible but it is not mainstream science for them. So, we have those problems. Gentlemen from foreign indexation services say, “Let’s see. This is not our topic and generates difficulties to enter in a secondary information system.”

SPA: *Los básicos no tienen problema con el modelo. Los sociales se están sintiendo maltratados porque no los representa y los están obligando a seguir unas pautas que tal vez no son las pautas que ellos tienen. En eso tienen más o menos la razón. Por eso llamaron a la comisión que, sin la intención de desmontar las cosas buenas que se lograron, está tratando de modificar un parámetro y es el de la visibilidad, porque nuestras revistas de ciencias sociales y humanas siguen teniendo problemas de visibilidad y de pertinencia. La caricatura es muy horrible, pero la voy a usar. Mientras que para una revista de ciencias sociales puede ser muy interesante un artículo sobre “técnicas de descuartizamiento con motosierra en el Bajo Cauca,” para una revista gringa eso no reviste importancia. Les puede parecer terrible, pero eso no es mainstream science para ellos. Entonces tenemos estos problemas. Los señores de los servicios de indexación por fuera dicen, “haber, no es como nuestro tema y genera dificultades para ingresar en el sistema secundario de información.”*

In short, journal evaluation and productivity-based salary systems are based on models from the basic and natural sciences that do not essentially represent the social sciences and the humanities. They pose them problems of visibility and relevance. In addition, social scientists have other criteria to evaluate their production, not only journal articles but also books and other resources such as repositories.

In summary, findings are organized in four parts. In the first part, university policies, arrangements, and actions to support and promote the publication of journals in Chilean, Colombian, and Venezuelan universities are described. They include the participation of institutional actors such as journal coordinators, libraries, ICT offices, and to a less scale, university press units. The role of editors is deemed very important but institutions have not developed yet systems to recognize their work. Universities have developed different systems to fund journals and have created the conditions for OA electronic publication and the creation of repositories. In the second part, national factors influencing the publication of journals are discussed. They include journal evaluation and evaluation systems, product-based salary systems, university rankings, and accreditation. The analysis continues with the regional factors, where the creation of regional journal directories, repositories, and indexes has been important for the development of the journals. The last part is about the global factors. It analyzes the role of international organizations like the IADB, international bibliographic indexes like WoS and Scopus, the OA movement, and electronic publication. At the end, some areas of tension like language of publication, imposition of models, and mainstream versus local publication are discussed. Findings attempt to analyze how the global, regional, and national trends and

pressures influence the publication of journals, and how universities and journals respond to those pressures.

5.0 DISCUSSION AND CONCLUSIONS

5.1 SUMMARY

This study was motivated by the impressive growth that scholarly/scientific refereed journals from LA&C in the last two decades (Holdom, 2005). Even though most of the journals are published by universities, the institutions where most of the research takes place in the region (Arocena & Sutz, 2005; Brunner, 1999), not many studies have been conducted to describe the policies, institutional arrangements, and actions that universities are doing to support the publication of journals. The literature review and the field work experience of the author of this investigation have shown that there are several conditions at the global, regional, and global levels favoring journal growth and are imposing pressures towards specific outcomes. This study aimed to describe university responses supporting the publication of scholarly-scientific journals to global, regional, and national trends and pressures, in Chile, Colombia and Venezuela, in terms of policies, institutional arrangements, and actions.

In-depth semi-structured interviews to journal editors, university authorities, government officials, and experts in S&T and higher education were conducted between 2009 and 2010, video recorded, transcribed, and analyzed qualitatively. The analysis had as starting point four supra categories that represented the institutional, national, regional and global levels proposed as a modification to the analytical model of allomorphism developed by Vaira (2004) to study

the pressures of globalization on higher education institutions and their response to those pressures. In order to assure trustworthiness in the management of the data and make findings more accurate, analysis of institutional documents and webpages was added to complement the interviews. The interviews included informants from different units within the institutions; thus a wider range of perspectives also contributed to the cleanliness of the data analysis. However, the data analysis was carried out inductively, generating themes and categories that were identified in the transcriptions. The description of findings was organized in two parts. The first part was the identification and description of policies, arrangements, and actions related to the publication of journals (institutional level) that were later synthesized in three matrixes organized around two categories: actors and policies, strategies and resources. In the second part, the global, regional, and national pressures and trends associated with the publication of journals were analyzed. The analysis in that section attempted to observe how the institutional arrangements, policy and actions were actual responses to the national, regional, and global pressures. The modification of the Vaira (2004) model was used to do so.

5.2 UNIVERSITY POLICY, ARRANGEMENTS, AND ACTIONS TO SUPPORT JOURNAL PUBLICATION

As it was mentioned above, the first section of the findings was organized according to two categories: actors and policy, strategies, and resources. Among the actors, it was noticed that the university authority involvement in the development of journals varies among institutions. That is why Vaira (2004) and Yoder (2006) talk about the unique responses (divergence) of

universities to globalizing pressures (convergence). Each university is a unique institution with a particular structure, organization, and dynamics. It was also observed that among authorities from the Universities Concepción in Chile, Javeriana and Antioquia in Colombia, and Zulia and Andes in Venezuela, a new character is emerging; the **journal coordinator** that can be a person or a unit. This person or office is in charge of providing support to the institutions' journals.

The analysis also took to notice that even though all universities in this study have **press units** their role is less strategic and more technical (proofreading, design, printing, and distribution). There were two exceptions at the Pontificia Universidad Javeriana and the Universidad de Concepción whose journal coordinators work at the press units. A unique case in the group of universities was that the Universidad Central de Venezuela that, lacking a unified policy about publications, presses have proliferated. It mentioned to have 17 at the time of the interviews. Citing Alvin Gouldner, Claudio Rama (2006) argues that university publishers, usually from public institutions and with a national orientation, assumed the production of technical and scientific books to basically meet the needs of tertiary education. However, university press units in LA&C are weak because they lack marketing policies, studies for the development of catalogues, administrative and professional autonomy, administrative and financial flexibility, and distribution and commercialization mechanisms, adding to this bureaucratic decision making. In this study, interviewees saw university presses as focused on book production with a limited participation in the publication of journals restricted to technical processes. University press units do not have a leadership position in the development of journals. In addition, if along with the mentioned weaknesses, the focus continues to be on print publications, university press units are probably going to be more isolated from the publication of electronic journals and risk to be obsolete.

Another actor identified in the analysis is the **university library**. Besides managing the collections, acquiring databases, and exchanging journals with peer institutions, libraries have gained relevance with the development of ICTs and electronic publications. In universities like as Austral from Chile, Javeriana and Antioquia from Colombia, and Andes from Venezuela, libraries support journals by doing the data processing (preparation and markup) for SciELO and, in some cases, for other indexes like LiLACS. In other cases, university libraries are in charge of repositories specific for journals or, more general, for several kinds of institutional documents. Universities in this study that have journal repositories are Universidad de Chile, Austral, Nacional de Colombia, Antioquia, and Zulia. The Universidad Austral de Chile in Valdivia has a repository that uses the SciELO methodology (Minga Online) Other use the OJS methodology to manage their repositories or have even developed their own platforms (Saber ULA). González and Molina (2008) mention how the development of ICTs has had a profound effect on documentation centers, particularly university libraries. The new activities include the creation of digital libraries (journal repositories, for instance) and changes in the way services are provided. The authors argue that besides gathering, organizing and disseminating information, libraries also have an important role developing culture and transmitting local values. In this study, the contribution of libraries to the growth of journals was evident but not emphasized by most of the interviewees. On the one side, libraries can use their expertise to support data processing for the inclusion of journals in bibliographic services. On the other side, libraries contribute to the visibility of journals through the creation of institutional repositories. This also reinforces the institutional character of a publication.

In the first section, the role and work of the **journal editor** was also analyzed. In general, editors are deemed essential for a journal to be successful. However, the growing demands for a

more efficient management, the creation of networks of referees, authors, and readers, the search of bibliographic databases and indexes to include a journal, and meeting the national requirements from salary systems and journal evaluation/funding systems imply increasing workload for the editors. Charum et al (2002) argue that the role of the editor goes beyond the merely technical processes of receiving manuscripts, assigning them to referees, and send them to press units for proofreading and publication when they are approved. More important, the editor supports the editorial committee, defines policies and organizes the process of knowledge certification. In this study, people doing editorial labor ranges from the lonely editor who does most of the work to the editor who has a team to carry out all the processes required by the publication. An editorial team could consist of an assistant editor and a secretary paid to work for the journal. Payment for the editorial labor also varies from the editor who does the work entirely *ad honorem* to the one who gets paid for his worked hours. In many cases, the editor can assign hours from her/his workload but they are often insufficient due to the increasing tasks of the editorial process.

The responsibility of the editor is very high but the credit given to him/her at the national and institutional levels is low. Salary systems do not promote editorial work either; they mostly recognize who publishes in indexed journals, not who publishes those journals. Often, a journal is tied to an editor, which poses a risk for the continuity of the publication. If the editor leaves, the publication of the journal might be interrupted because there are not incentives for the new generations of scholars to do editorial work. Given the complexity and increasing demands of the editorial work, editors should be certified. In a study carried out in several LA&C countries with editors, journal staff, librarians, and other informants, Fischman et al (2010) found a similar situation: a few editors receive a monetary incentive for their work, others receive nonmonetary

incentives; around a fifth do the journal work as part of their job description and a majority do not receive anything in return other than the personal satisfaction. They wondered what motivates editor to work for free. The reasons were diverse. Given the increasing responsibility of journal editors and the role of journals in the development of university research, more recognition should be given to editors.

Regarding the actions that universities have carried out to support their journals, one of the findings is that some universities start supporting journals when there already are prestigious publications that inspire and serve as models for other journals in the institution; when the number of journals is high and it is necessary to make decisions related to funding, standards, and so on; or due to competition for accreditation, presence in national/international rankings, and possible access to funding. Universities can also decide to give the same support to all their journals or to privilege the best positioned in national and international indexation systems. To be positioned in international bibliographic indexes is frequently seen as a synonym of prestige and quality (Charum, 2004). The indexes considered gold standards are the Thomson Reuters' WoS and, at the regional level, SciELO. For the journals from several disciplines it is more important, though, to be indexed by services specialized in their fields. However, the WoS and SciELO, and to a less proportion Scopus and RedALyC, are usually the points of reference for decision making and action taking. Those indexation services include journals that meet international quality criteria.

University actions often start with journal **inventories and diagnostic evaluations**, which are used to make initial decisions like creating funding systems. It is important to emphasize here that usually editors do not have training or knowledge in journal publishing. In most cases, different kinds of **training** are provided by the institutions, which are appreciated by

the editors. Finally, a few universities include **annual follow-up reports to evaluate performance**. In addition to the aforementioned actions, universities have carried out other actions to support their journals, including development of journal repositories, journal funding systems, and publication standards.

Just 13 years ago, Andrew Odlyzko (1998) wrote about the future of **electronic publication**. He predicted that all journals would have digital versions and electronic publication would reduce costs. However, the transition would not be easy due to inertia and perverse economic incentives of scholarly publishing businesses. As he predicted, electronic publication is changing the dynamics of publication of journals. Cost reduction, reaching more global audiences, and elimination of physical borders were seen by the interviewees as advantages of electronic publication. When there is a reduction of funding sources, like in the case of public funding for journals in Venezuela, electronic publication seems to be a viable alternative. However, journals keep a small circulation for subscribers, libraries, and people who still prefer hard copies. In this case, the inertia mentioned by Odlyzko (1998, 2000, 2004) covers not only the publishing industry but also the customers. Some areas like humanities do not want to give up print publication because they still move in other research and communication traditions.

The revolution of scholarly communication that is taking place (Odlyzko, 2000) brings together electronic publication and **OA**. Universities use different platforms to publish OA journals. Some are unified by the institution, some are not. The most used is OJS, which has also been utilized to create journal repositories. PKP has innovated with OJS by bringing not only a journal publication platform but also an electronic journal management system (Willinsky, 2005; Willinsky, 2006). In some cases, universities used external repositories to publish their journals. This includes SciELO and RedALyC, which were mentioned by the interviewees but there are

other like Dialnet from the Universidad de La Rioja in Spain. Electronic publication, OA, and repositories constitute a trend in journal publication among the universities studied. They increase the visibility of publications (Packer, 2009).

Publication of journals in the Chilean, Colombian, and Venezuelan universities of this study is associated with two factors in terms of funding: **professors' salaries** and **journal indexation**. On the one side, university professors receive salary increases (Colombia) or bonuses (Chile and Venezuela) for publishing in indexed journals (Albornoz, 2009). Bernasconi (2007) described how Chile deregulated university professor salaries and introduced a competitive system to encourage research and reward universities through the productivity of their faculty. In Colombia, the salary system at the Universidad Nacional was similar to the system in U. S. universities. That system was emulated with the decree 1444 in 1993 and modified with the decree 2912 in 2002 to be expanded to all public universities. In Venezuela, the Organic Law of S&T (LOCTI) established that all university professors are researchers and created the PPI, recently re-launched as PEI with some modifications, to promote and reward professors' productivity (LOCTI, 2005). Governments and/or universities promote the publication and recognize national journals included in the main regional and international bibliographic indexes (Steenkist, 2008).

On the other side, **journal funding** may come from three sources: government, institution, and other sources (Arocena & Sutz, 2000; Arocena & Sutz, 2001; Arocena & Sutz 2005; Bernasconi, 2007; Fischman et al., 2010). In Chile, journals can apply for competitive funding managed by CONICYT. In Venezuela, even though it is currently suspended and uncertain if it is going to be reactivated, funding from FONACIT used to be available for journals included in the national index. There is no funding for journals from Colciencias or

another government agency in Colombia; however, there are some experiences at the department (province) level with the sales of a stamp pro Universidad de Antioquia whose profit is used to support research-related activities. There is also a stamp pro Universidad del Valle in the Department of Valle but the documents reviewed do not mention journal funding (Univalle, 2009; Univalle, 2011). At the institutional level, sources of funding for journals can come from central authorities (offices the vice rectors for academic affairs, research, or communications and their delegate units) and/or from academic units, that is, schools, centers, or departments. Additional sources of funding vary from one journal to another including fees for article publication, subscriptions, and advertisement. This is similar to the findings of Fischman et al (2010).

5.3 5.3 UNIVERSITY RESPONSES TO NATIONAL, REGIONAL, AND GLOBAL PRESSURES AND TRENDS

Chile, Colombia, and Venezuela have unique realities; however, there are some common threads that are associated with the growth of scholarly/scientific peer-reviewed journals. In general, the interest in journals has been prompted by the availability of **public funding** (Chile and Venezuela), the existence of **national journal evaluation systems** as a part of the science and technology policy (Colombia and Venezuela), the **participation of government agencies** in promoting journals (CONICYT in Chile, Colciencias in Colombia, and FONACIT in Venezuela), the existence of **product-based salary/bonus systems** represented by, among others, the publication of articles in indexed journals (Chile, Colombia, and Venezuela),

university accreditation that values the existence of institutional publications (Chile and Colombia), and the discussion about **university rankings** (Chile, Colombia, and Venezuela).

At the national level, converging trends and pressures in **Chile** come from the university ranking, the productivity-based incentive system, the availability of competitive funding, and the coordination of SciELO by CONICYT (Bernasconi, 2007; Prat, 2001). Since universities are immersed in a competitive environment, they do not have another option than competing for funding and getting better positions in the rankings. Even though the target in this context is more individual journals rather than institutions, universities have a saying when they develop policy and strategies to help their journals grow. For instance, Universidad de Concepción provides full funding to its top journals leaving out less developed publications. In addition, it is important to remember that 74.4% of scholarly/scientific refereed journals in Chile are published by universities. Looking at the Vaira (2004) model of allomorphism, the Chilean case fits the world economy competitive structure component when the government enacts reforming policy. Currently, Chile continues developing a strategy to promote innovation, is discussing new legislation in R&D that includes more investment from the private sector (AIP UChile, 2011), and is holding talks to create a national agreement for education (Gobierno de Chile, 2011). Organizational allomorphism takes place when universities provide funding, electronic platforms, and other resources to make their journals internationally competitive.

The growth of journals in **Colombia** is associated to the university salary systems, the national journal evaluation system Publindex, and university accreditation (Charum, 2004; Charum et al., 2002; Gómez, 1998; República de Colombia et al., 2006a; República de Colombia et al., 2006b). University salaries reward productivity, public universities through salary increases and private institutions mainly through one-time bonuses. Publindex is seen as a

successful policy that has evolved as new demands and issues emerge and has improved the quality of journals in Colombia. Evaluation of productivity uses Publindex as the standard in Colombia. The university accreditation includes indicators such as publications. Unlike Chile and Venezuela, there is not public funding for journals in Colombia. Looking at the Vaira's (2004) analytical model, national pressures and trends are articulated around the three factors mentioned above. However, Publindex has been a central reference for the university responses supporting the publication of journals. It is used to determine faculty salaries, as criteria for accreditation, and as a tool for competition between institutions.

According to the analytical model developed by Vaira (2004), universities are exposed to pressures from national-states. Current government in **Venezuela** is developing policies and actions aimed at transforming the country into a socialist state (Meneses Sala, 2011). Traditional public universities have opposed to the reforming policy that is seen as a threat to university autonomy. Recently enacted legislation on S&T (López & Odremán, 2010; República Bolivariana de Venezuela, 2010a) and higher education (Meneses Sala, 2011; República Bolivariana de Venezuela, 2010b; Vásquez, 2010) emphasizes tenets like national sovereignty, pluralism as opposed to capitalist imperialism, research to solve national problems and develop endogenous capacities, and participation of local communities. However, traditional universities see the new legislation and other measures such as the public contract law, the luxurious expenditure law, the budget restriction for universities, and the changes in journal funding and the PEI, as a way to impose the government's ideology. In order to face government pressures and support the development of journals, universities have implemented different strategies that include emphasizing funding of top journals, migration to open access electronic platforms, and development of institutional repositories.

5.4 APPLYING THE ALLOMORPHIC CHANGE MODEL TO JOURNALS

In 2004, Vaira presents the concept of *Organizational Allomorphism* to examine changes in higher education institutions under the pressures of globalization. In this analytical framework, globalization is seen at the cognitive level, that is, the spread of ideas about how universities should be organized and the role of universities have in society, but allows for exploration of how organizations respond to global ideas (Yoder, 2006). The study of global trends in higher education shows an ambiguous impact and diverging interpretations; there are two kinds of theses or theories developed to explain them: convergence and divergence. Convergence theses see top-down homogenizing processes producing isomorphic changes. Change is seen as linear, deterministic and causal and responses are conciliation, adaptation, translation, and assembly. On the other hand, divergence theories focus on bottom-up complex, multifaceted, heterogeneous and idiosyncratic responses that can be manipulation, interpretation, mediation, resistance, and conflict. In an attempt to mediate between the two groups of theories, Vaira (2004) developed the concept of Organizational Allomorphism to explain how organizations adapt or translate institutional patterns and archetypes through complex and multifaceted responses. Higher education institutions are central in the globalizing world facing new tasks and social, political, and economic demands.

Drawing from Margison and Rhoades (2001), Vaira adds the role of national political, regulative, and government systems in shaping the structure and organizational features of institutions like universities. Both nation-states and individual institutions are exposed to different types of global pressures. Vaira (2004) identifies two kinds of pressures: institutional and competitive. Institutional pressures are imposed by the *world polity* constitutive structure

when new legitimated and legitimating criteria are incorporated. The Dictionary.com Unabridged (n. d.) defines polity as the “form of government or organization of a state, church, society, etc.” On the other hand, competitive pressures are inflicted by the *world economy* constitutive structures. Globalization has been related to neoliberalism, which Vaira sees as a political ideology and project to change the institutional structure of societies. The world polity is constructed at the multi-national level and is represented by multi-national agencies such as UNESCO, the World Bank, the International Monetary Fund (IMF), the Organization for Economic Co-operation and Development (OECD). In this study, the international organization that was found associated with the development of journals was the IADB.

The three main global trends that affect individual universities are the imperative to be knowledge producers and deliverers in the context of the knowledge societies; the less regulating or intervening and more mediating role of the government; and the entrepreneurialization and managerialization of institutions (Vaira, 2004; Yoder, 2006). In this study, they are represented by the international corporations that manage journal indexes. The strongest one is Thomson Reuters with the WoS (consisting of SCI, SSCI, and AHCI) and other specialized indexes. However, another global force opposed to the mainstream corporate-linked science was identified: the **open access movement** to push for the democratization of knowledge.

Analysis through the allomorphism framework involves the global, national, and local (institutional) levels (Vaira, 2004; Yoder, 2006). Previous exploration of the current development of LA&C scholarly/scientific journals by the author of this study suggests that a high number of this kind of publications is originated in universities. That search also conducted to identify several factors that seem to be influencing and influenced by the quantitative and qualitative growth of journals. Those factors can be found at the global, regional, national, and

institutional levels; therefore allomorphy could be a useful framework to study the current dynamics of journal publication in LA&C. This study expands the framework by adding a new level of analysis: **LA&C as a region**. There are two reasons to introduce the regional level in this study: the existence of regional bibliographic databases/indexes and some shared historic, linguistic, cultural, social, political, and economic background among the Spanish- and Portuguese-speaking LA&C countries.

The analytical model of allomorphy proposed by Vaira (2004) to study the pressures of globalization on higher education and the responses of universities to those pressures establishes the analysis at the global, national, and local levels. In this study, given the role that regional initiatives have played in developing and giving visibility to LA&C journals, it was considered interesting to include the analysis of the regional level. During the data analysis, attention was paid to regional indexes and databases as well as other possible emerging topics. As well in previous sections of the results, findings from the interviews have been complemented with information from documents and websites.

Findings in this study are organized in four parts. In the first part, university policies, arrangements, and actions to support and promote the publication of journals in Chilean, Colombian, and Venezuelan universities are described. They include the participation of institutional actors such as journal coordinators, libraries, ICT offices, and to a less scale, university press units. The role of editors is deemed very important but institutions have not developed yet systems to recognize their work. Universities have developed different systems to fund journals and have created the conditions for OA electronic publication and the creation of repositories. In the second part, national factors influencing the publication of journals are discussed. They include journal evaluation and evaluation systems, product-based salary

systems, university rankings, and accreditation. The analysis continues with the regional factors, where the creation of regional journal directories, repositories, and indexes has been instrumental for the development of the journals as guarantors of quality and forums to increase visibility. The last part is about the global factors. It analyzes the role of international organizations like the IADB, international bibliographic indexes like WoS and Scopus, the OA movement, and electronic publication. At the end, some areas of tension like language of publication, imposition of models, and mainstream versus local publication are discussed. Findings attempt to analyze how the global, regional, and national trends and pressures influence the publication of journals, and how universities and journals respond to those pressures.

Figure 7 summarizes and shows the allomorphic change model applied to the publication of journals. In the model, pressures from the global level are represented by mainstream indexes, international agencies, and internationalized higher education. Among mainstream indexes, Thomson Reuters' WoS (SCI, SSCI, and A&HCI) is considered the gold standard. Likewise, journals in those indexes are regarded as the top publications in the world. However, it does not represent the universe of publication in the world. In addition, the indicators used to determine the quality and advance of publications, analysis of citations and impact factor, are constantly challenged. Recently, Thomson Reuters created the WoS Expanded to welcome publications from underrepresented regions, fields, and languages. In LA&C, an index from Europe, Elsevier's Scopus, has become more visible by promoting other forms of analysis and representation of publications, H factor and atlas of science (that was already emulated by Thomson Reuters and other information services). Scopus has reached S&T agencies and ministries of education trying to influence policy. Criteria to be indexed in Scopus are also more flexible, causing the database to grow considerably in recent times and double the WoS. The

second global element, barely mentioned during the interviews, is international university rankings. Two of them, Shanghai and Financial Times, include productivity in terms of publications.

The third actor, the IADB, has had a more direct influence on LA&C, particularly on Chile, Colombia, and Venezuela, through the S&T development program that started in the early 1990s. The three countries received a number of loans to develop their science, technology and innovation sectors. The IADB, as well as other international financial organizations like the WB and the IMF, has introduced a series of indicators and measures to follow up the implementation and results of the programs derived from loans. Publication of journals is included as one of the indicators.

There is another component that has not been included by Vaira (2004) in the analytical model of allomorphism. His focus is on globalization from the point of view of market economy and neoliberal reforms. However, the study of journals introduces the pressures for democratization of knowledge that are represented mainly by the Open Access movement. OA promotes the free circulation of knowledge without being constrained by monetary charges for access to publications. There are important initiatives such as the directory DOAJ that includes the OA journals that are published in the world, and journal repositories like Dialnet from the Universidad de La Rioja in Spain. There is another initiative that has had an important impact on the publication of journals worldwide, including the three countries represented in this study: OJS by the Public Knowledge Project. OJS is a software that allows journal editors publish their OA journals but more important to manage all the publication processes, from reception of manuscripts, to peer-review, editing and publishing (Willinsky, 2005; Willinsky, 2006).

The allomorphic change model applied to the publication of journals also includes the regional level. It is represented by the journal directories, repositories and indexes that have been created in LA&C to promote and strengthen journals published in the region. The first one was Latindex that was created in 1995 to establish a series of quality criteria for journals and a secondary information service. There were two summits with experts from the region in 1994 and 1997 who gathered to discuss the problems that publications faced and alternatives to improve the publications in the region (Cetto & Alonso, 1999; Cetto & Hillerud, 1995). Latindex obtains information about journals from the S&T agencies in each country. The journal repositories turning into information analysis services, RedALyC and SciELO, have had an enormous impact on the publication of journals. SciELO is particularly strong in biomedical publications and RedALyC in the social sciences. SciELO moves at the national level while RedALyC is more flexible and work with institutions as well (Aguado-López, 2010; Packer, 2009; Packer et al., 2001; RedALyC, 2008). The last repository to mention here, CLACSO, is not limited to scholarly/scientific peer-reviewed journals. It includes a variety of publications of interest in the social sciences (Babini, 2010).

The national level is very important since it determines the context of higher education and S&T, where policy is developed and enacted. A first element to consider is the political moment and orientation of a nation-state. In the case of Chile and Colombia, the orientation is towards free-market and neoliberal reform (Biglaiser & DeRouen, 2004). Recent reform in Venezuela is marked by a strong sense of nationalism and a socialist ideology (Albornoz, 2006). Common elements to the three countries are the existence of journal evaluation/funding systems (Bernasconi, 2007; Charum, 2004; Gomez, 1999; Prat, 1998) and product-based salary incentive systems (Albornoz, Bernasconi, 2007; Brunner, 2006).

Now, allomorhism takes place with the university responses to the national, regional, and global pressures and trends. In this study, several actions and arrangements have been identified to improve the quality and quantity of journals. They are unique responses from individual universities, and even academic units. However, they show the existence of some patterns. A final claim of this study is that those trends might be showing the emergence of a model of journal publication in LA&C. It will have to be proved in future comparative studies, including other universities, regions, countries, and issues. The following are the components of the proposed emerging model of journal publication:

- University-based publication
- Transition to Open Access electronic publication
- Main languages of publication: Spanish and Portuguese
- Actors involved: libraries, ICT offices, university press units, vice rectors of research/academic affairs
- Institutional funding mechanisms
- Diagnostic and performance evaluations
- Increasing training for editors
- Journal coordination by an office or person
- Regional factor: Regional journal directories, repositories, and indexes

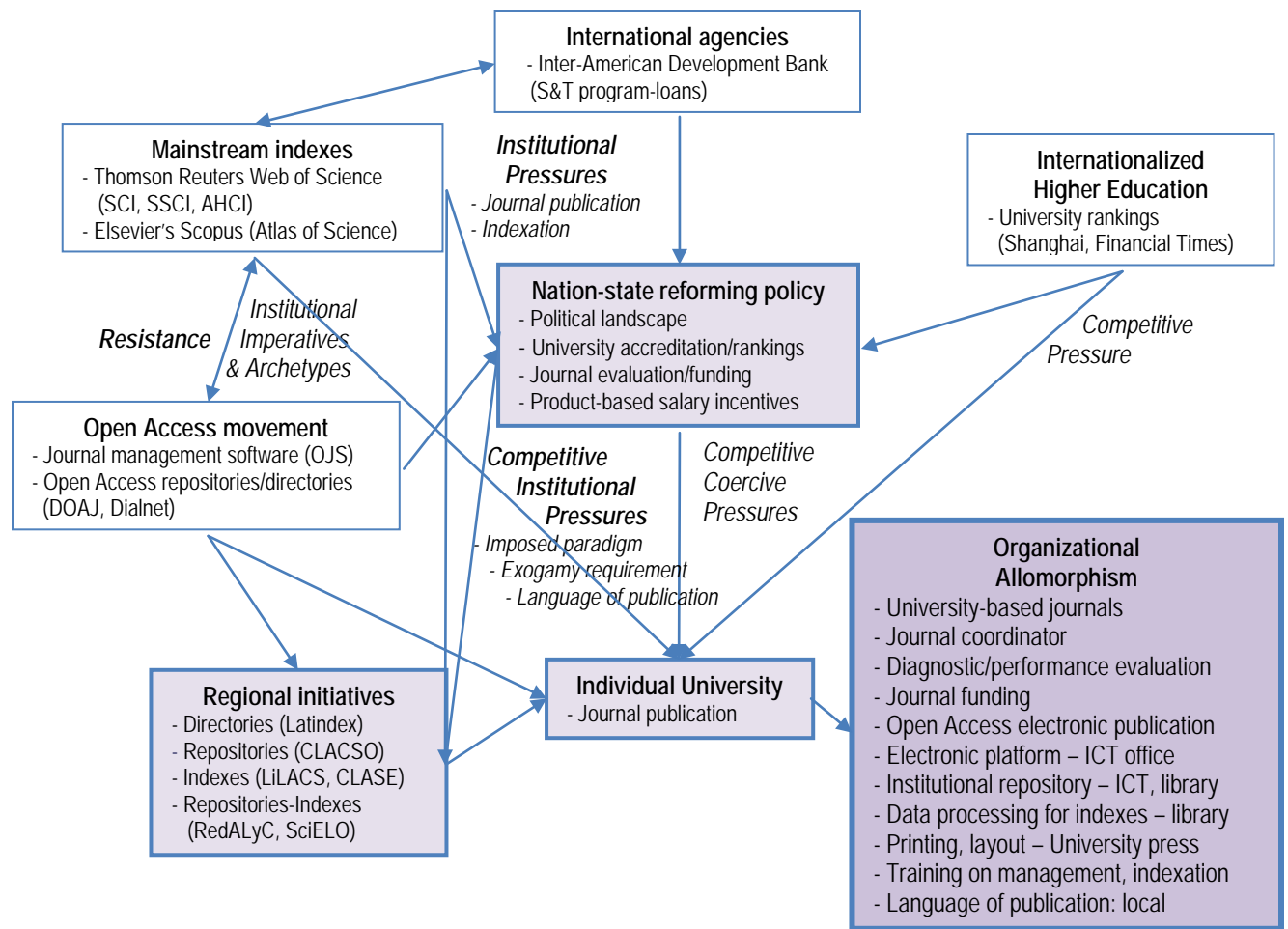


Figure 7. Allomorphic change model applied to publication of journals

5.5 CONCLUSIONS

All universities in the study have developed different kinds of policies and arrangements to support and promote the publication of journals. It includes several types of funding systems, training for editors on issues ranging from journal management to indexation, electronic

platforms for the publication of journals, and evaluations to make diagnoses on journal situation in an institution and/or performance follow-ups in determined lapses of time.

The work of editors is considered very important for the success of journals and it is general that their workload has increased with the arrival of primary and secondary information services. However, it is not recognized in merit or salary systems, which could be a risk for the sustainability of a journal.

OA electronic publication is the current trend in journal publication, though print copies still circulate in reduced amounts. It has attracted new actors to participate in the publication of journals: journal coordinators (technical and strategic work), libraries (journal exchanges, databases, SciELO markup, and repositories), ICT units (electronic platforms), and to a less extent, press units (technical processes).

National factors such as the prevailing political ideology, university accreditation, the existence of journal evaluation, ranking and/or funding systems, and the salary incentive model for public university professors determine the national trends in journal publication:

- Chile: market-oriented model; competitive funding for journals; salary bonuses for publications, product-based university accreditation and incentives; WoS and SciELO as standards
- Colombia: market-oriented model; university accreditation; journal ranking; product-based salary increment system; wide range of general and specialized bibliographic services as standards
- Venezuela: nationalism and socialist reform; journal funding and ranking (suspended); product-based salary incentives (reinstated); standards at the regional and national levels

The existence of regional directories (Latindex), repositories (CLACSO), indexes (LiLACS, CLASE, Periódica), and repositories/evolving into indexes (SciELO, RedALyC) in local languages has promoted the quantitative and qualitative growth of journals. They have played a role of increasing the visibility of Chilean, Colombian, and Venezuelan publications.

International organizations, in particular the IADB, have been co-responsible for the growth of journals in Chile, Colombia, and Venezuela. The Bank implemented in the 1990s a strategy to promote development in LA&C through a series of programs, for instance, on S&T. The S&T development program consists of lines of credit and improvement plans that include the publication of journals.

Even though regional initiatives have gained relevance, Thomson Reuters' indexes included in the WoS (SCI, SSCI, and A&HCI) maintain their status as gold standards. It is not happening though without challenges from the emergence of other services like Elsevier's Scopus and the development of OA journal management software (OJS), repositories (Dialnet), and directories (DOAJ).

Finally, even though journals have considerably advanced in the last two decades, some areas of tension have emerged. In general, they are associated with the imposition of a model of publication that is based on research tradition from the basic and natural sciences, presses to increase exogamy of publications, and still maintain languages barriers.

5.6 RECOMMENDATIONS

5.6.1 Recommendations for future research

The present study shows some trends in terms of policy, arrangements, and actions to support and promote journals among a group of 12 large, traditional, and prestigious universities from Chile, Colombia, and Venezuela. With the exception of the Universidad Católica Andrés Bello, all these universities have a long research tradition. In order to have a more accurate map of university journal publication in the three countries, it would be necessary to look at other types of institutions, for instance, other kinds of higher education institutions, private universities and public universities located in other regions throughout each country.

Regardless the differences between Chile, Colombia, and Venezuela, in terms of national context and tensions, this study has suggested the existence of an emerging model of journal publication in the region. It is recommended to add new cases by groups of countries, for instance, Brazil, Mexico, and Argentina; Central America, the Caribbean, and smaller South American countries; Cuba; and the non-Spanish- and non-Portuguese-speaking Latin America. Further research will help disconfirm or confirm the actuality of the model and possible variations,

Mainstream publication is dominated by North America, Europe and a few other countries. However, there are vast regions in Africa, Middle East, Asia, and the former Soviet republics that may be facing similar struggles to Latin America and may be having similar developments. It would be interesting to study the development of journals in those regions in

order to validate the proposed emergence of the Latin American model or, on the contrary, to identify a broader model of journal publication from countries in the periphery.

The study of journal publication allows connecting areas such as faculty development, university research, academic disciplines, and communication of knowledge. They bring together the higher education and S&T sectors, which is important because of the attention that the research mission of universities is currently receiving. However, they are not an isolated phenomenon. They should be part of the national S&T policy and structure. Future studies should look at the development and direction that the S&T sector is having and what the participation of universities is.

Even though the growth and development of journals seems to be a phenomenon taking place across the disciplines, it has been evidenced that the model of publication privileges one research tradition over another (natural and basic sciences vs. social sciences and humanities). It would be interesting to study how journals are evolving in the different disciplines in LA&C.

Language of publication is an area of discussion associated with the growth of journals published in Spanish and Portuguese. Even though it seems that the language barriers are being somehow lifted with the new openness of bibliographic and information services to LA&C journals (WoS Expanded), it would be interesting to study language issues in the publication of journals.

5.6.2 Recommendations for policy

The growth of journals in Chile, Colombia, and Venezuela is taking place mostly in universities. Journals are key elements associated with faculty salaries, accreditation, university rankings, and

communication of research. Therefore, if a university decides to support and promote its journals, one of the first actions should be creating mechanisms to recognize and support the work of journal editors, the most important actors for the success of journal enterprises.

Regional and national indexes are credited for the growth and improvement of journals in Chile, Colombia, and Venezuela. However, this study has shown that the focus on indexation is moving the attention away from the main purpose of research and communication of knowledge. Universities must open spaces to discuss it and to determine how to address the external pressures that are causing that deviation. The discussion should include who will have access to knowledge and how he/she benefits from it.

The publication of journals currently involves several actors: editorial boards, libraries, ICT offices, offices of vice rectors for academic affairs/research, and university press units (for technical processes). OA electronic publication is displacing print publication. There are more options for journals but also more demands. That requires rethinking and changing the traditional business models of journal publication.

Currently, one of the main concerns in the publication of journals is making them visible. Universities must encourage editors to seek the inclusion of journals in all available directories, indexes and/or repositories, regardless if some of those services are actually not considered in the salary incentive or journal evaluation systems. Visibility will pay later.

APPENDIX A

INTERVIEW PROTOCOLS

The first of the appendices is composed by the interview protocols for the interviews with journals editors, university authorities, and experts. The data for this study come from two preexisting projects that looked at trends, obstacles, and advances in journal publication in Argentina, Brazil, Chile, Colombia, Mexico, Uruguay, and Venezuela. A number of interviews carried out in selected universities from Chile, Colombia, and Venezuela, and experts in each of the three countries were chosen for this study. This project also covers just one of the many themes that could emerge from the pool of interviews, which is the institutional responses, in terms of policy, institutional arrangements, and actions to global, regional, and national pressures and trends in journal publication. Therefore, the questions asked to each informant and listed below correspond to those asked in the previous two projects. In addition, early in the research process, the analytical framework of allomorphism was identified, modified, and used to study the factors that influence journal publication at the global, regional, national, and institutional levels. Questions about this were included in the interviews.

A.1 INTERVIEW PROTOCOL FOR INTERVIEWS WITH JOURNAL EDITORS

1. Purpose, history, and organization of the journal.
2. Obstacles, challenges, and achievements of the journal and strategies carried out to face obstacles and challenges.
3. Articulation of the journal to the institutional and national policies in higher education and science and technology.
4. National, regional, and global factors influencing the publication of the journal.

A.2 INTERVIEW PROTOCOL FOR INTERVIEWS WITH UNIVERSITY

AUTHORITIES

1. Research development and organization at the university.
2. Development of scholarly/scientific refereed journals.
3. Promotion of a culture of publication.
4. Positioning of the university's research and publication at the national, regional, and global levels.

A.3 INTERVIEW PROTOCOL FOR INTERVIEWS WITH EXPERTS

1. Higher education context in the country.
2. Science and technology context in the country.

3. Journal publication context in the country.
4. Global, regional, and national factors influencing higher education, science and technology, and journal publication in the country.

APPENDIX B

CODE BOOK

The code book used for data analysis is presented. It consists of two parts. In the first part, the list of preliminary categories, subcategories, and key issues extracted from the interview transcriptions is presented. The MS Word track changes feature was used to group the preliminary codes and identify new and fewer categories that were employed to present the findings. The first process was inductive and did not use predetermined categories; they emerged from the reading of the transcriptions. The description of university policies, institutional arrangements, and actions to promote the publication of scholarly/scientific peer-reviewed journals was carried out with these sets of categories. The second part includes a list of supra categories, categories, and subcategories. This process was deductive and utilized the levels of analysis determined through a modification of the allomorphism analytical framework as supra categories. The categories and subcategories came from the initial inductive analysis. This part was used to analyze how the policies, institutional arrangements, and actions represent university responses to global, regional, and national pressures and trends for the publication of journals. The code book experienced iterative revisions.