

University rankings and the concept of ‘WCU’ on the institutions,
scientific – academic production and academic careers:
implications for traditional private universities

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Mónica Bonifaz

Pontificia Universidad Católica del Perú

Academic Department of Management

GRIES

(Grupo de Investigación en Educación Superior)





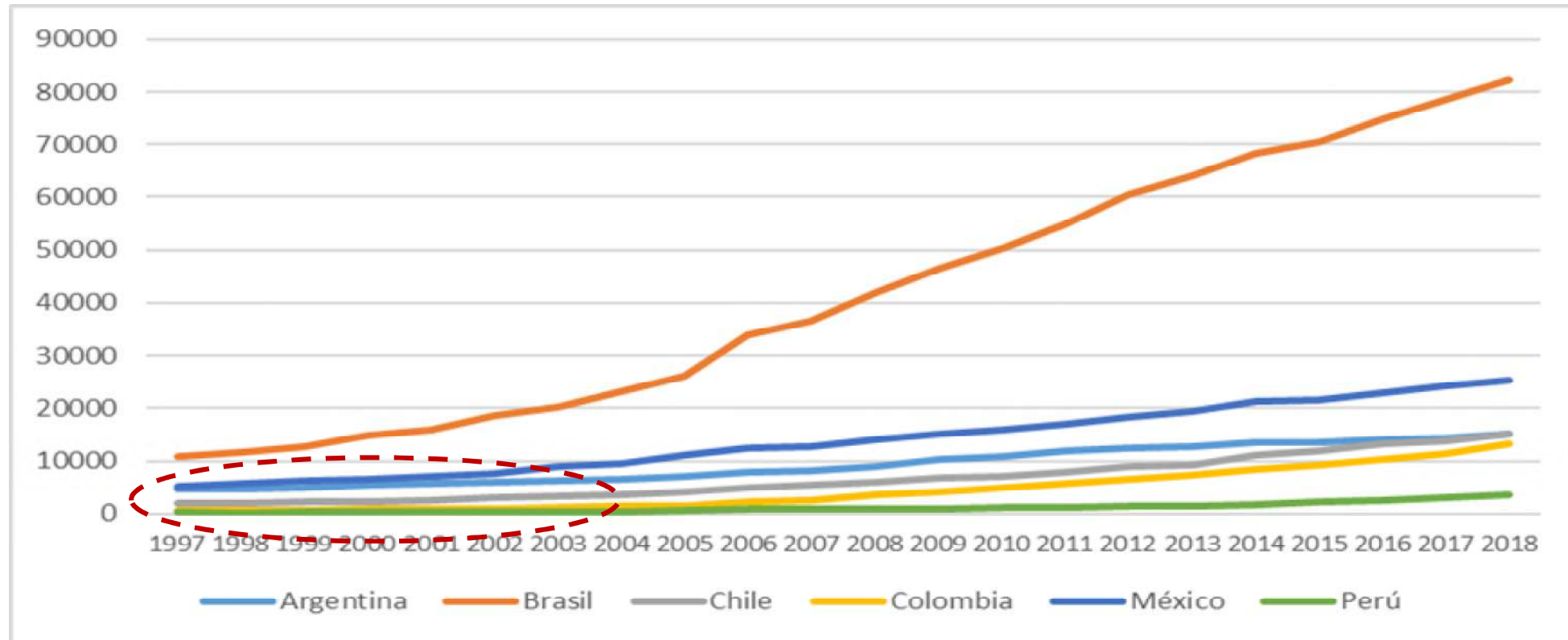
Posed questions

- What is the ongoing purpose of higher education and faculty work?
- Can Latin American universities both draw from and contribute to global science and scholarship and also advancing nation-building agendas and distinctive cultural contributions?
- Does the Latin American universities work only for itself and its own prestige or does it have a larger social and political mission, wider than its contribution to measured economic growth or global bibliometrics?



Latin America scientific academic research and the contribution to the generation of knowledge in and for our region, still remains modest

Scopus bibliometrics (1997 – 2018)



Source: RICYT (2020) Brasil, Argentina, México, Chile, Colombia y Perú. <http://www.ricyt.org/2010/09/comparativos/>



The cases: Chile, Colombia and Peru traditional private universities

However, in these countries a group of representative traditional private universities play an important role for their national research systems

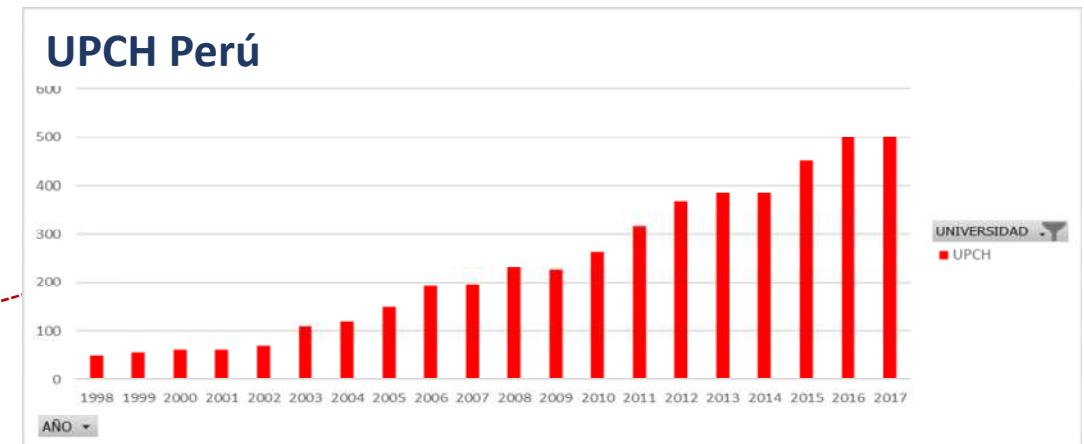
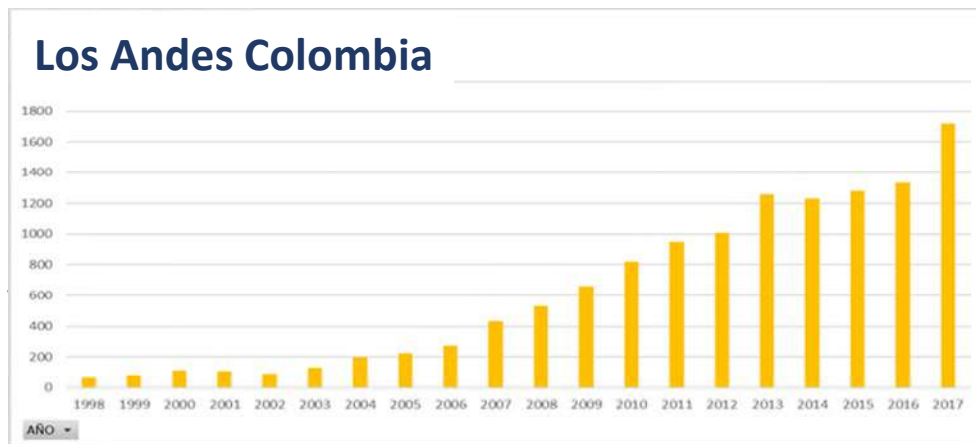
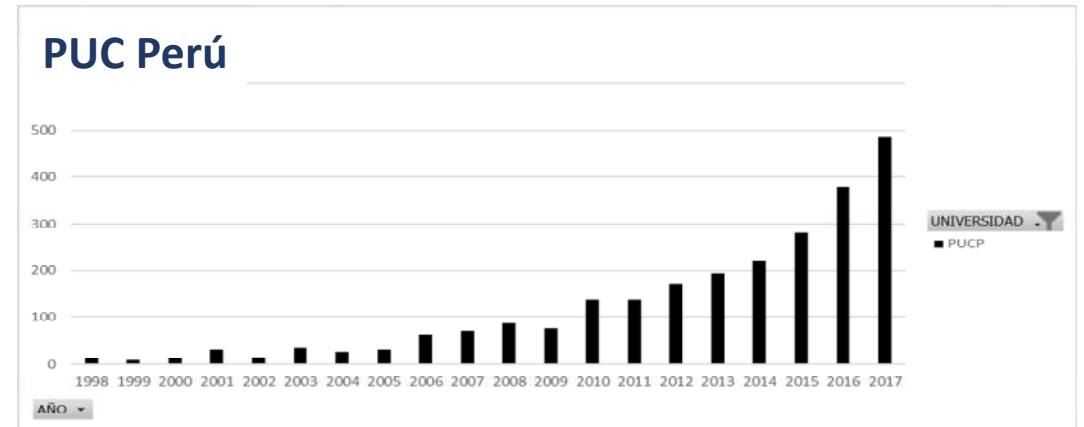
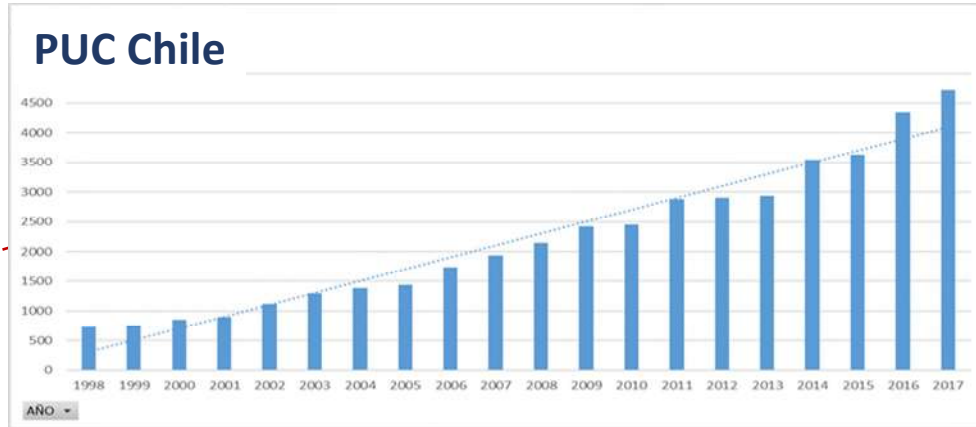
	PUC Chile	PUC Peru	Los Andes	UPCH
Foundation year	1889	1917	1948	1962
Legal nature	Legal entity under public law	Non-profit legal entity under private law	Educational institution of common utility	Non-profit legal entity under private law
Undergraduate students	27064	23488	14398	5268
Master's students	3414	6024	3366	2616
PhD students	1202	392	385	66
Total professors	3575	2579	1823	1510
Appointed professors	1265	933	664	684
THE Country Ranking	1	2	3*	1

Source: Own elaboration based on the 2019 statistical yearbooks, the statutes in force to date in each university and the World University Ranking by Times Higher Education (THE) 2019 by research.

* The first two universities are state-owned.

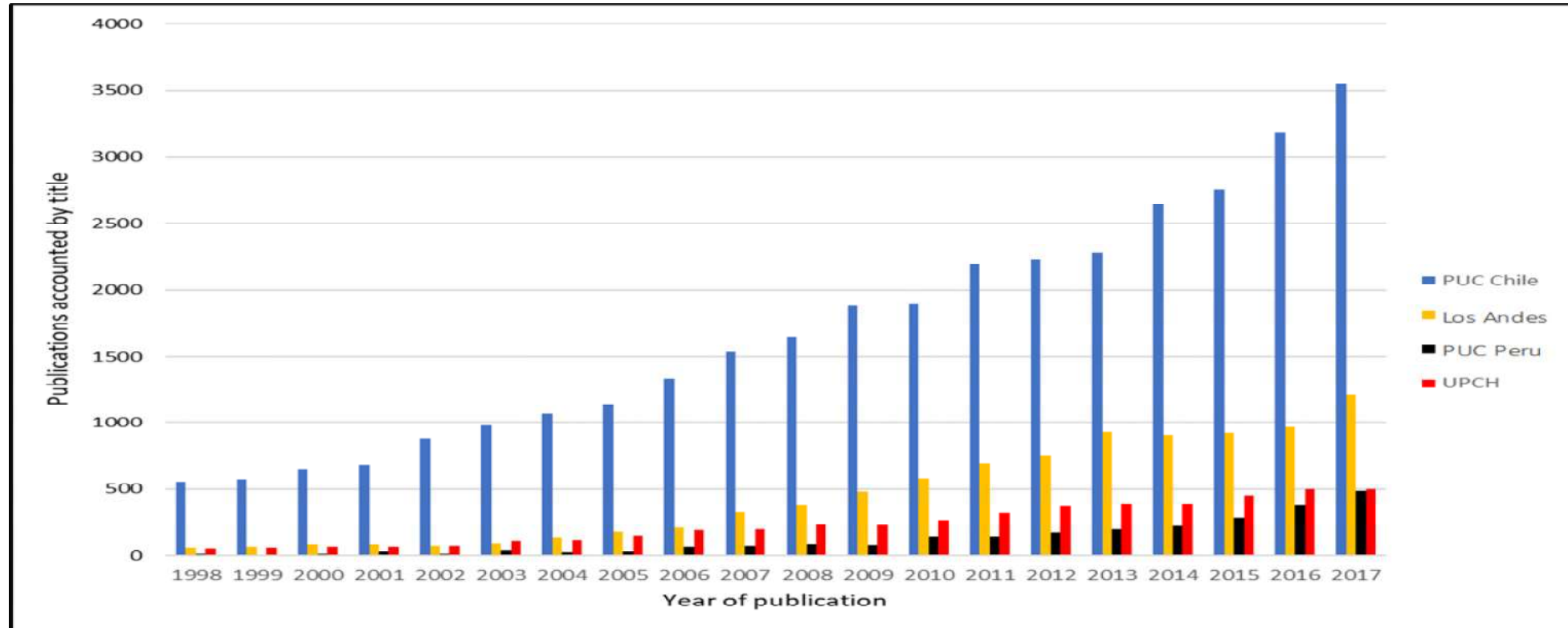


Seen from the perspective of their scientific – academic production and the profile of their teaching staff, the four case studies have achieved significant development in research between 1998 - 2017





However, when analyzed in a comparative manner, they reveal important differences that merit their study





Our research question and objectives

- How do the global and local institutional conditions and the historical heritage of each university study case intervene, strengthening or weakening, the development of investigation?
- Identify and understand the conditions, or combination of them, explain the heterogeneous development of research among the four cases, given the strong traditions of the university institution, and of these universities in particular.
- Better understanding the cases agendas and their distinctive global and national contributions, from the economic, social and cultural perspectives.



Methods and data

- Study is carried out from the perspective of organizational studies.
- Comparative cases that incorporate in the framework of analysis both the institutional and organizational conditioning factors that intervene in the development of research and the generation of knowledge
- The study of these four traditional private universities followed a mixed approach:
 - A first approximation to the scientific academic production measured from the publications with affiliation of the cases (Scopus 1998 – 2017)
 - followed by a qualitative analysis based on 30 interviews and documentary review of each case.

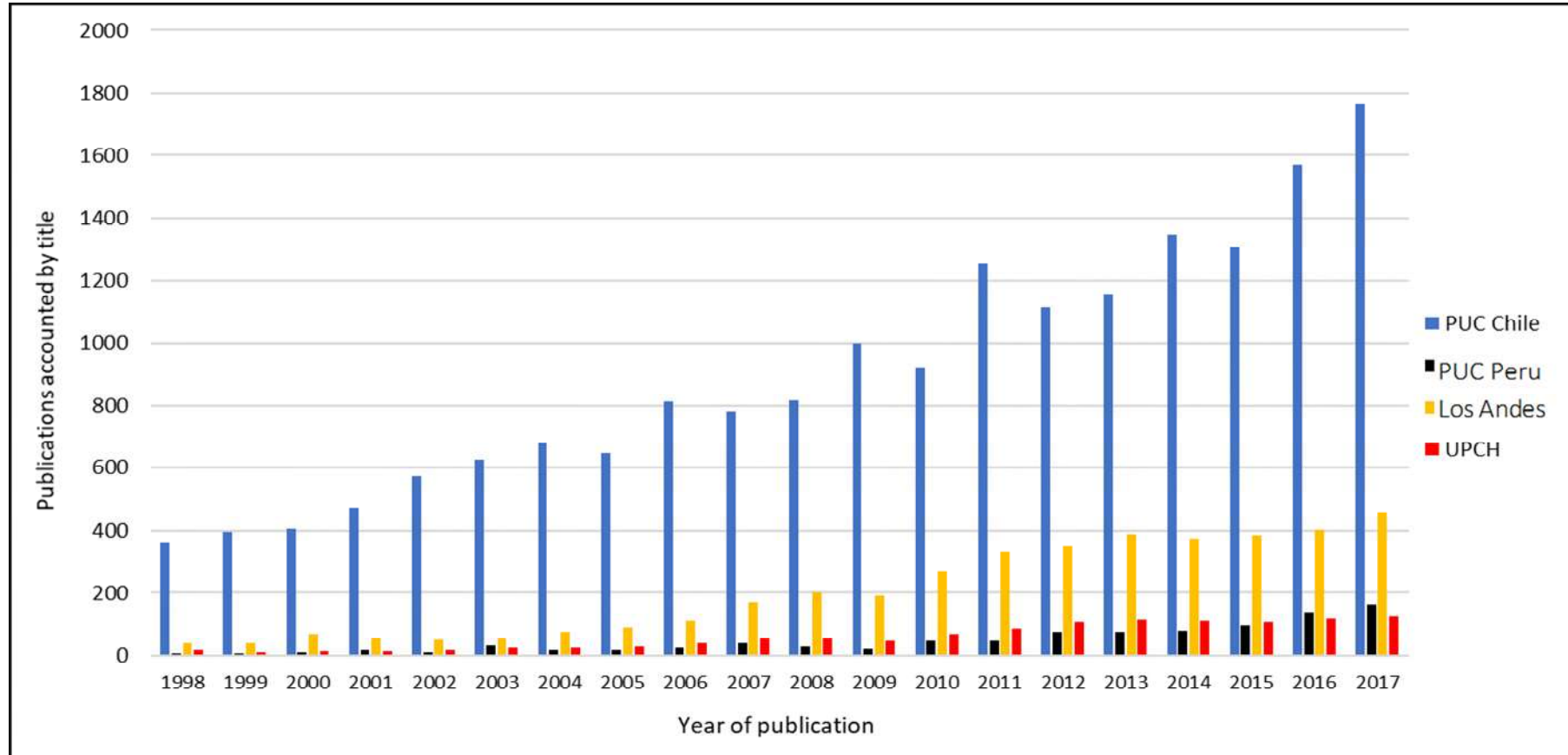


Descriptive analysis

- Used as an approximate measurement (proxy) of the scientific academic production of the appointed and active professors to 2019, belonging to 6 comparable disciplines
- A database was built with information on the profile of the teaching staff and their academic production registered in Scopus between 1998 - 2017.
- The database registry is of 1551 professors of the following disciplines or specialties:
 - Biology, chemistry, and physics,
 - Medicine, psychology and engineering
- The analysis used accounting by titles with at least one author with affiliation from each of the case study universities.

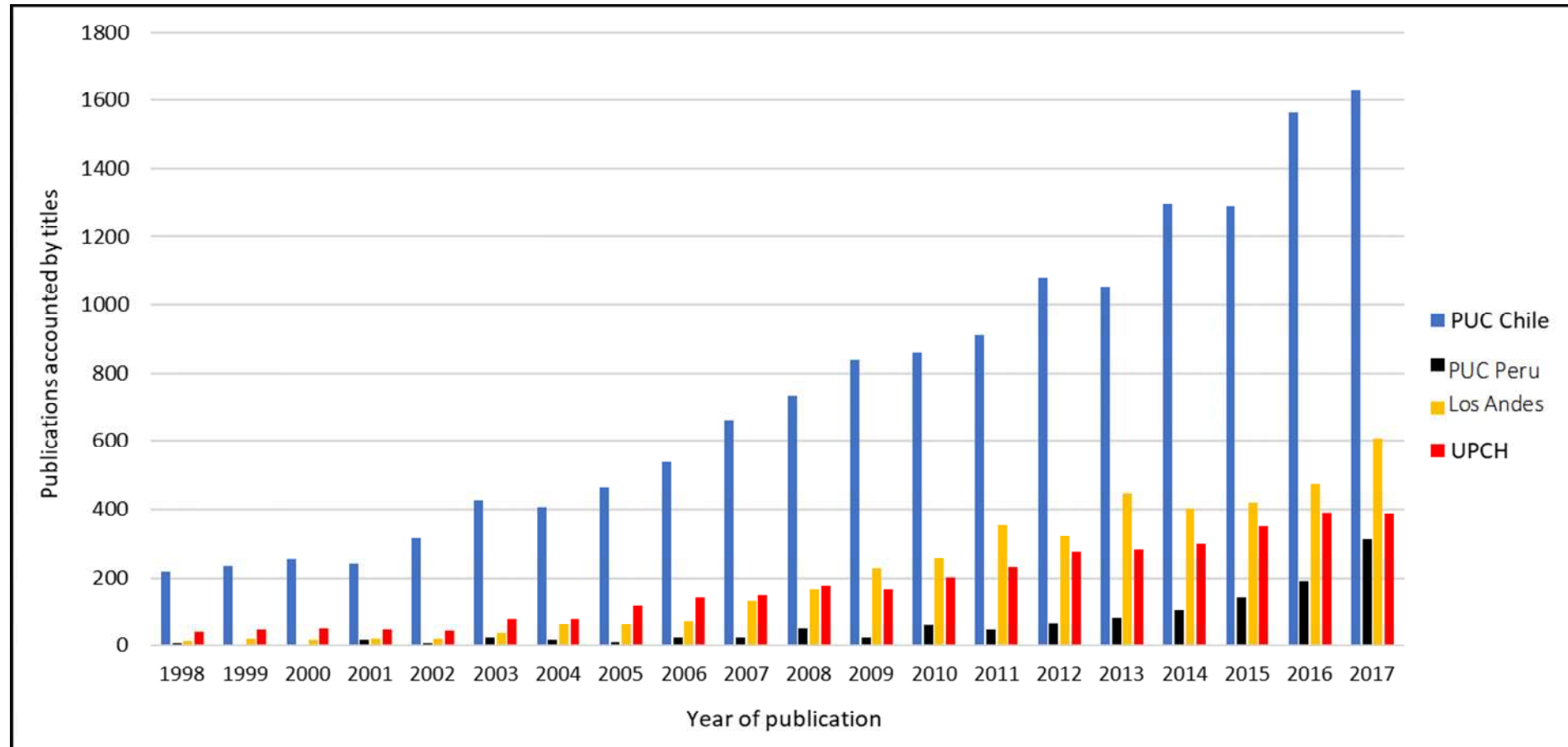


Biology, chemistry and physics (Scopus 1998 – 2017)





Medicine, engineering and psychology (Scopus 1998 – 2017)



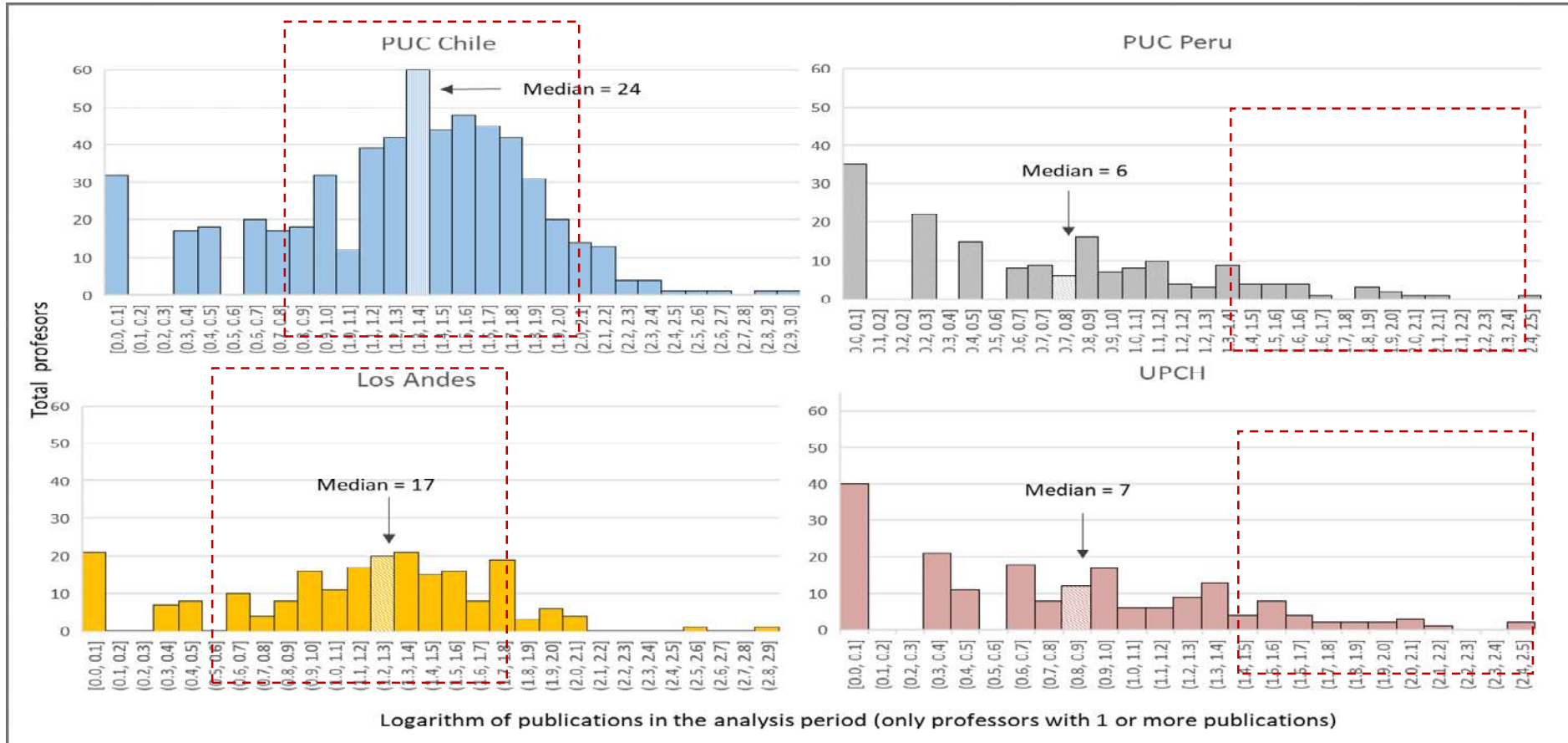


Scientific academic production and “critical masses of researchers”

- Critical mass analysis understands that the existence of a "greater" number of professors with the capacity to publish one or more indexed articles produces greater influence in the community than a minority or an "elite" group: *the greater the common interests, the greater the willingness of the members (peers) of the community to achieve said interests* (Oliver and Marwell 2001; Torchia et al. 2010).
- Comparative analysis between scientific academic production and the existence of a critical masses of professors with the profile, capacities and incentives to support research in each university.
- To verify if the case study universities managed to form a critical mass of professors we used the logarithmic distribution (\ln^{10}) of the sample of professors with one or more publications in the period analyzed.



Logarithmic distribution of publications of the sample of professors (1998-2017)



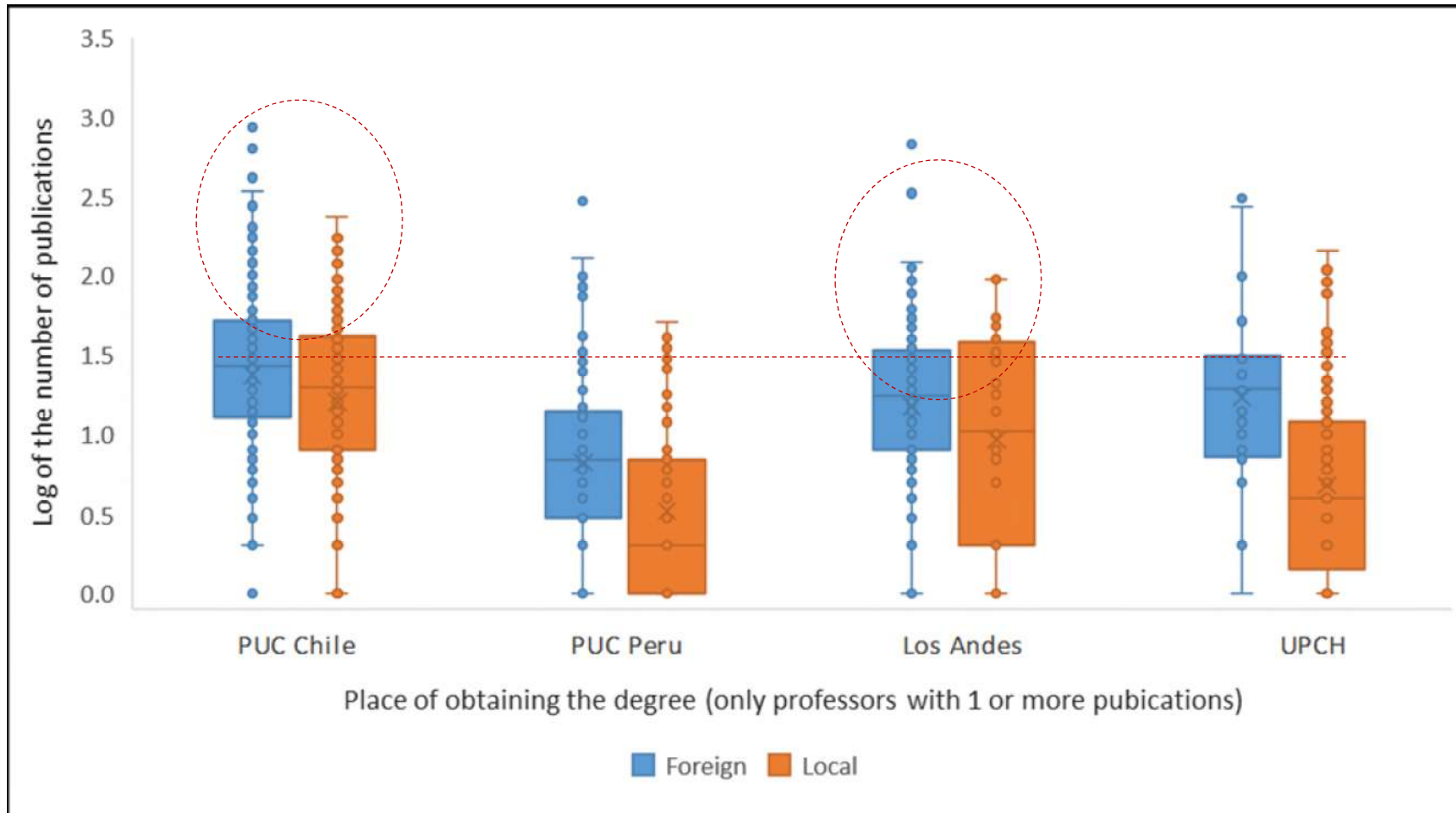


Willingness to hire professors with foreign or local degrees and trajectories

- Understanding that the research networks established during international training and trajectories allow for greater research activity and greater capacity to produce, share and communicate knowledge (Horta 2013; Pelz and Andrews 1966)
- To observe this relationship we analysed comparatively the relationship between the profile in terms of their maximum degree and the place where the sample obtained through the logarithmic distribution (\ln^{10}) of publications in the period of analysis
- This would reflect different dispositions to implement internal policies and regulations in favor of hiring professors “from outside”, which would consequently explain the differences in the development of research in each case.



Logarithm distribution of publications of the sample of professors with foreign or local degrees





“Endogamous practices” in academic career governance

- Empirical studies about “academic inbreeding” in universities in Portugal, Spain and Mexico revealed the relationship between endogamous practices and low scientific productivity of university professors. (Horta, 2008; Mora, 2015; Padilla, 2008; Horta, Veloso & Grediaga, 2010)
- This phenomenon emerges from institutionalized hiring and promotion practices in which academic merits are less relevant than social connections and personal relationships, privileging these over standardized processes that assess individual skills and merits (Godechot & Louvet, 2010; Altbach, 2015)



How do the global and local institutional conditions and the historical heritage of each university study case intervene, strengthening or weakening the development of investigation?

- Large part of the research has paid attention to the homogenizing effects of institutions in universities, as well as their unintended consequences on university identity and autonomy
- Less attention has been paid to the organizational conditions associated with the different responses of the universities, that is, how and why they adapt or not to said pressures.
- Two predominant perspectives:
 - **New institutionalism** (Meyer and Rowan, 2006; Scott, 2014; Ramirez and Christensen 2013; Levy, 2006)
 - **Imprint Theory** (Stinchcombe, 1965; Marquis and Tilcsik 2013; Simsek et al. 2015; De Cuyper et al. 2020).



Proposed model: institutional conditions and the historical heritage in the development of scientific and academic research

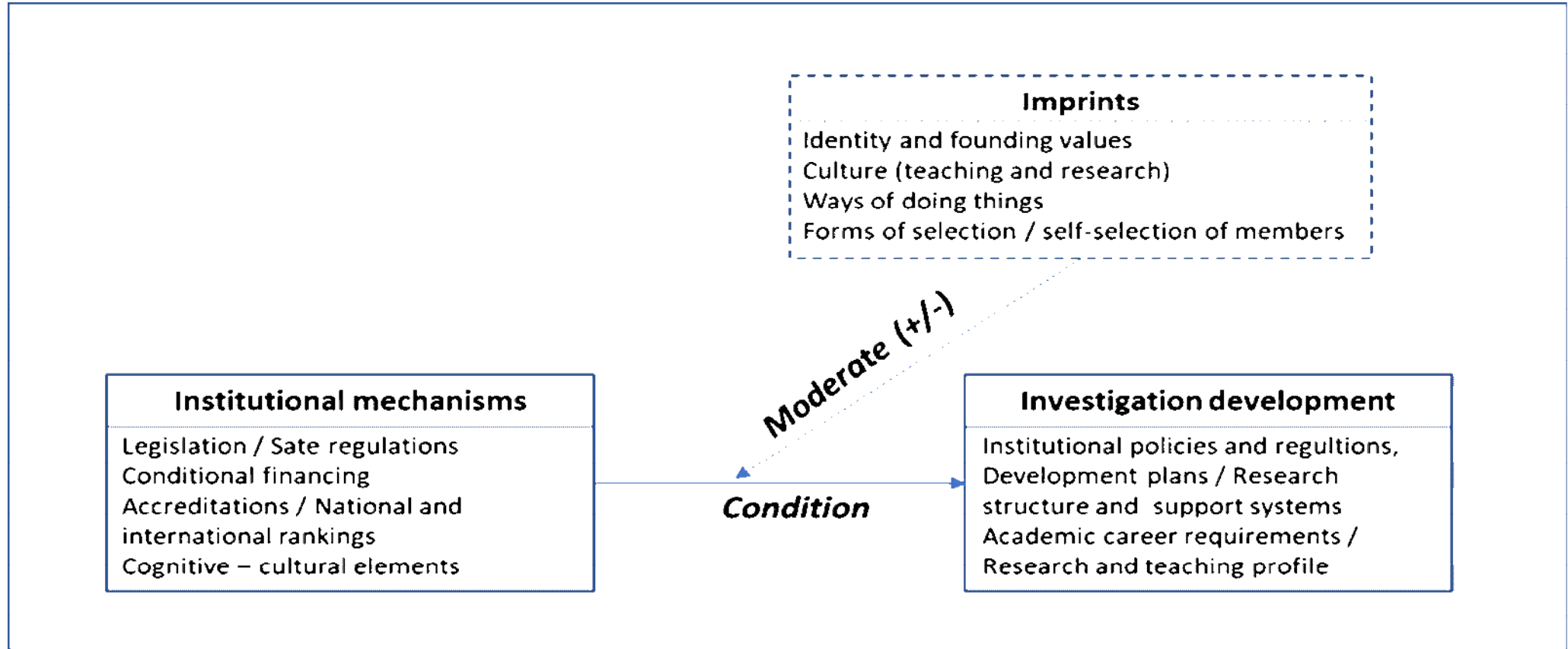




Table 2: Dimensions and qualitative analysis items derived from the analysis framework

constructs	Dimensions	Prior items (codes)
Institutions	Regulatory mechanisms	Legislation, Quality Assurance, Conditional financing
	Normative mechanisms	Accreditation, Rankings, national research system,
	Cognitive-cultural mechanisms	Competition, Prestige, Commitment to society
imprint	Historical legacies	Identity and founding values Imprint of the founders Ways (routines) of doing things Forms of selection and self-selection of members
Investigation Development	Institutional policies	Research Policies, Development Plans, Institutional Regulations
	Structure and support mechanisms	Research structure and management, Research budget Research support systems
	Faculty requirements and profile	Academic career requirements Research Requirements Evaluation processes



Qualitative analysis

- Qualitative approach of multiple compared cases (Bryman, 2012; Rowley, 2002).
- “Structured and focused comparison” (Levy, 2008), based on a defined set of questions or theoretical propositions, more or less identical for all the cases under study.
- Deliberate sample of informants among academics and administrators, in government and management positions: 28/30 interviews were recorded in Chile, Colombia and Peru (June – September, 2019).
- Thematic content analysis was applied (Kuckartz, 2014); interviews were literally transcribed and the data was processed with the Atlas Ti v.9.24 software.



Summary of the category analysis of the historical heritage dimension

	Imprint
PUC Chile	High reference to Catholic foundational values; emphasis on culture of investigation, search for truth and generation of knowledge; High reference to the commitment to the training of quality professionals and commitment to society.
PUC Peru	High reference to founding values; emphasis on the teaching culture (of general and undergraduate studies) and its commitment to society; High reference to traditional ways of doing things.
Los Andes Colombia	High reference to the identity and values impregnated by the founders; Emphasis on research culture and its commitment to society based on research and the training of quality professionals.
UPCH Peru	High reference to the identity and values impregnated by the founders; emphasis on research culture as part of the training commitment; foundational identity of high commitment to society.

Note: Own elaboration from the analysis of citations and codes processed with Atlas. Ti v9.24



Summary of the category analysis of the institutional mechanisms dimension

	Regulatory	Normative	Cognitive-cultural
PUC Chile	High dependence on competitive public funds; Positive assessment of the regulation of promotion of research (scholarships); Alignment with economic stimuli to improve higher education	Positive assessment of CONICYT research standards; Influence of national accreditation systems; Low reference to the influence of rankings.	High commitment to training; Positive assessment of the link with the industry; High reference to competition in the sector and the need for differentiation; High reference to commitment to society.
PUC Peru	Dependence of public funds competitive by specialties; Positive assessment of the regulation regarding minimum teaching requirements (degrees and dedication).	High reference to the influence of rankings; Influence of research standards CONCYTEC; Neutral reference to national accreditation systems	High reference to competition in the sector and the need for differentiation; High reference to commitment to society.
Los Andes Colombia	Low influence of public policy in the development of research for private universities; Under dependence on public financing (competitive) of research in private universities.	Positive assessment of COLCIENCIAS research standards; Influence of national and international accreditation systems (by specialty); Low reference to the influence of rankings.	High assessment of the prestige and leadership of the University; High reference to competition in the sector and the need for differentiation; High reference to commitment to society.
UPCH Peru	High reference (-) to the University Law (30220) regarding minimum teaching requirements (degrees and dedication); High dependence on competitive public funds (FONDECYT) and its undesirable effects (on costs).	Evaluation of CONCYTEC research standards (national registry of researchers); Neutral reference to national accreditation systems; Low reference to the influence of rankings.	High reference to competition in the sector and the need for differentiation (state and corporate universities); Reference to commitment to society.



Summary of the four case studies compared

	imprint	Institutional Conditions	Organizational changes
PUC Chile	Teaching - research	Conditional public financing (+) Accreditation systems Leadership and differentiation	Clear institutional policy and regulations Structure and support systems developed Highly demanding academic career
PUC Peru	Teaching	Conditional public financing (+) Law 30220 (-) Leadership and differentiation	Institutional policy and regulations in process (science and engineering) Structure and support systems developed Academic career of medium requirement (requirements of law)
Los Andes Colombia	Teaching - research	Accreditation systems Leadership and differentiation	Clear institutional policy and regulations Structure and support systems developed Highly demanding academic career
UPCH Peru	Teaching – research (Medicine and science)	Conditional public financing (+) Law 30220 (-) Leadership and differentiation	Institutional policy and regulations in process (medicine and science) Structure and support systems under development (few resources) Academic career of medium requirement (requirements of law)

Note : Own elaboration from the analysis of citations processed with Atlas. Ti v9.24



Final remarks

- Descriptive and qualitative analysis, allow us to verify that the case study universities with favorable imprints towards “research and teaching” showed a greater willingness to adopt internal policies and regulations aligned with institutional, local and global demands, in favor of research.
- These two cases showed a greater willingness to implement reforms referring to greater demands on academic career. In these cases, the development of critical masses of researchers and a greater development of research in the study period is observed.
- The development of research, under the preeminence of the World-Class University or the Global Emerging Model, is a consequence of different combinations of institutional, mechanisms and dynamics of global and local scope.



Final remarks

- We observe that the regulatory mechanisms have less homogenizing effects, and that the influence of the cognitive-cultural mechanism becomes relevant in all four cases. This explains why the adaptations or responses are more stimulated by a logic of preserve prestige in the sector and rivalry for resources.
- From this perspective, it is better understood the role of these four traditional private universities and their need for differentiation and leadership, through teaching and research, as the best way of doing the right things.
- Preserving the prestigious of their universities, as referred consistently by the interviewees, strength their commitment to society, sustainability and economic development. And that can be observed in their own research agenda.

Thanks

Table N°3 Governance Categories

Dimensions	Definition	Categories		
		Low institutional endogamy	Medium	High institutional endogamy
Requirements aligned with institutional objectives	Signaling about preferences in schooling, research skills and expected results, aligned with institutional objectives	High requirements: maximum grade; projects with external financing; quality publications; full dedication; trial period.	Average requirements: maximum grade; quality publications; full dedication.	Basic requirements: legal requirements by categories; minimum academic publications; it does not require full dedication.
Decision making arrangements	Intervening parties that represent institutional interests in decision-making to hire and promote teachers.	Ad-hoc committees for each process; pairs of other units for promotion to associate; central decision for promotion to Full Professor.	Different evaluation committees according to the process; central decision for promotion to Full Professor	Committees of the same composition for hiring and promotion processes; without pairs of other units or central government
External peer participation	Reasonably impartial review of individual trajectory, skills, and abilities, moderating unit preferences.	National and international reviewers for Associate and Full Professor	External peer reviewers, national or international, for promotion to Associate or Full Professor	Evaluation process does not require the opinion of external peer evaluators.
Incentives and control mechanisms	Incentives and stimuli from the entrance to the academic career, in the trajectory and for the permanence in the highest category.	Maximum permanence in the Assistant category; subcategories for permanence as Associate Professor; exceptional merits for Full Professor.	Conditioned permanence in the Assistan category; subcategories for Associates; high merits for Full Professor.	Indefinite term from entry to the academic career; minimum research requirements for promotion.