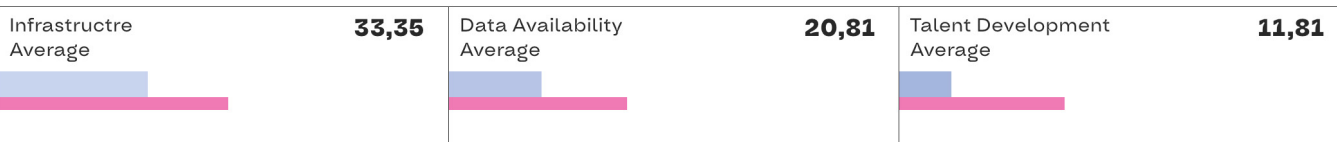


Bolivia

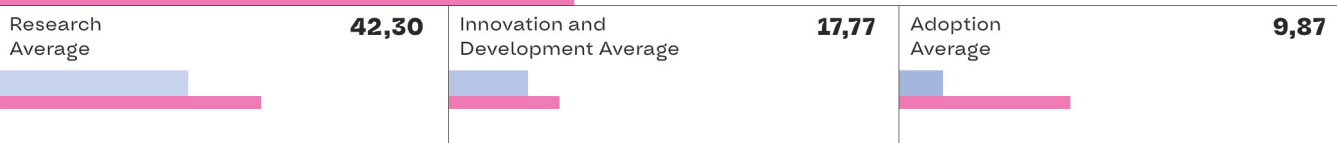
 Index Score **15,10**

 Ranking **12**

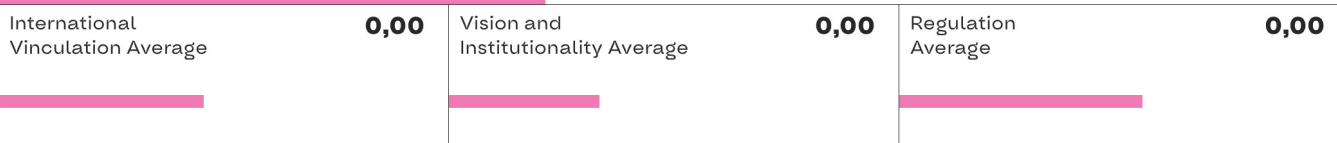
12.224.110 / Population
 3.345,20 USD / GDP per capita
 0,16 / % allocated to R&D
 0,692 / Human Development Index (HDI)



Enabling Factors Average **21,92**



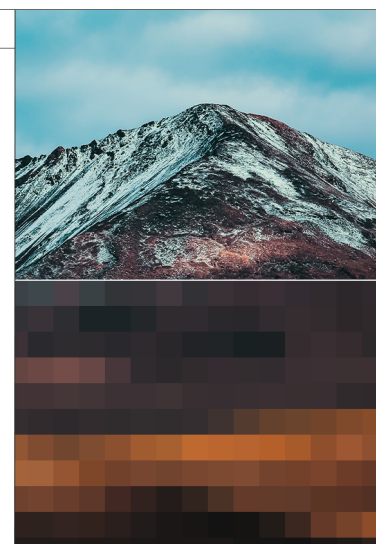
Research, Development and Adoption Average **23,31**



Governance Average **0,00**

OVERALL SITUATION

Bolivia has shown participation in AI scientific production at the regional level, but faces large gaps in governance, human capital and adoption, which places it at the bottom of the ILIA. Nevertheless, the country has the opportunity to take advantage of its scientific production and technological infrastructure to establish a national strategy, strengthen regulations, promote human capital formation and both public and private adoption in AI. In terms of talent migration, the trajectories are different from the rest of the region; significant migration is observed especially between 2000-2010, where the income is consistently high for the proportion of national authors. Migration and collaboration with Latin American countries stands out, and the absence of diversification to other destinations as we see in the rest of the region.

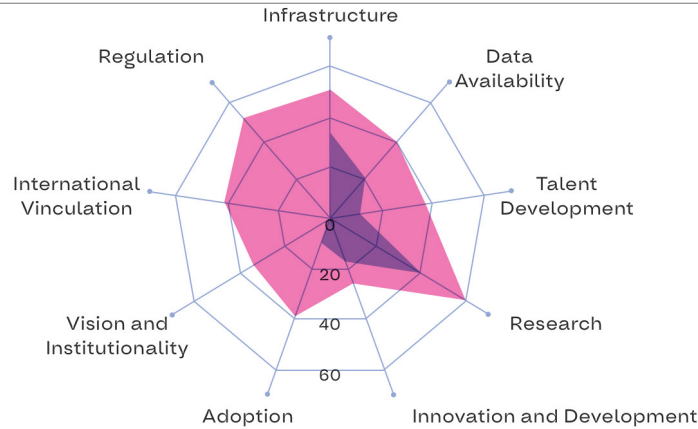


Bolivia

Index Score **15,10**

Ranking **12**

Bolivia
Latam



Graph BO1

GENERAL FINDINGS

Improving infrastructure for Bolivia is a challenge that urgently needs to be addressed. Better infrastructure is essential to generate structural conditions that enable access to technology, increasing the percentage of the population using the internet, the average download speed and the availability of 5G. For the computing indicator, the country has the opportunity to create data centers and acquire supercomputers. There is also a high value of subscriptions to mobile devices and households with computers, both positive signs of technological penetration in the country that demonstrate the ability to reduce the digital divide and promote technological inclusion and access to information.

The country presents significant opportunities in the development of AI talent, one of the areas with the greatest potential for growth is the strength of professional training. There are ample opportunities to strengthen and expand the supply of undergraduate, master's and doctoral training programs, which would allow the development of skills relevant to the labor market. To strengthen this ecosystem, it is essential to invest in AI training and literacy, starting by implementing the ICT proposal in the formal curriculum, making available open courses on AI and incorporating technological skills in the main Bolivian industries.

In terms of research, Bolivia participates in regional scientific production in the field of Artificial Intelligence. Regarding the productivity of AI researchers, it can be highlighted that the research produced by the scientific community has a relatively large impact considering the scale of the community, with significant average citation numbers.

The most profound gaps faced by Bolivia in relation to the region are the subdimensions that make up the governance category, where there is an absence of all indicators. It has no AI strategy or regulation on the subject. It does not have specific regulations on AI or related, such as cybersecurity and data protection updated. With joint work between the scientific community, the State and civil society, objectives and goals could be established with respect to AI, which would result in an efficient national strategy in this area.

Bolivia

Index Score **15,10**

Ranking **12**

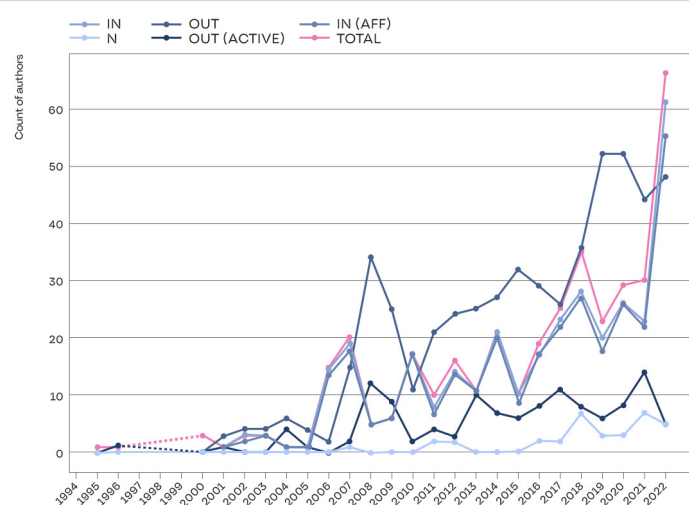
TALENT DRAIN:

For all the graphs in the section it is important to consider that the high variability in the series analyzed is due to the fact that the academic community is still small, so the mobility of few authors strongly impacts the trajectory.

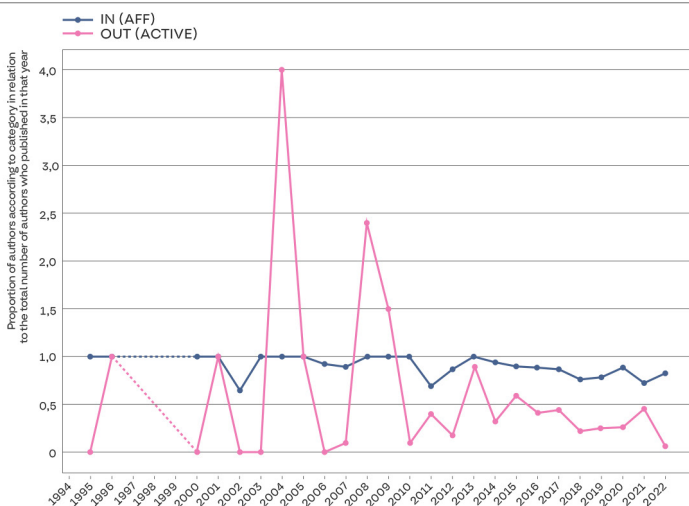
Graph BO2 shows that the brain drain is significant for the country; in fact, it is higher in proportion than in the rest of the countries in the region and a marginal irregular increase over time can be seen (out-active). We note that the number of total authors was very low until 2005, only exceeding 30 authors in 2018 (total). In contrast to Latin America, in 2022, there is no negative impact due to the pandemic, on the contrary, production increases. The curve is very similar for those who published in other nations (in-aff) and also for those publishing for the first time in IA (In).

The authors who constantly publish in AI form a small group, in its highest year, 2018, does not exceed 10 (N), which suggests the need for the country to strengthen its and generate AI research centers to increase its scientific community. The same happens for those who integrate AI concepts in their publications (out), it only reaches 50 in its best year (see Graph BO2).

Talent migration: Bolivia / Graph BO2



Talent migration: Bolivia / Graph BO3



The high variability in the first 20 years is due to the fact that the academic community was still small, so the mobility of few authors strongly impacts the proportion. The proportion of authors who had not published in the region and who do so in the year of analysis has remained consistently high, reflecting the constant foreign influence of the discipline (in-aff). On the other hand, the proportion of talent drain is significant, especially between 2000-2010, as shown by the out-active, when publications by local authors based outside the country were up to 4 times greater than production in Bolivia (see Graph BO3).

Bolivia

Index Score **15,10**

Ranking **12**

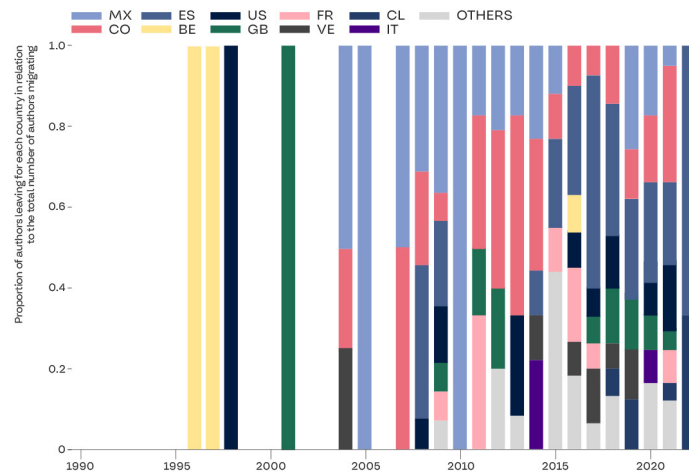
TALENT DRAIN:

Regarding the origin and destination of authors, the importance of Spain and Colombia is evident, both for those who arrive and for those who leave, even above the importance of the USA. In this sense, collaboration and destinations within Latin America are relevant for Bolivia, both for those who arrive and those who leave, among them Mexico, Chile and Colombia.

It is important to note that the importance of countries such as Spain has not decreased as in the rest of the region, in fact, the countries that have decreased have been some of Latin America and Portugal. On the other hand, we see that the entry and exit of authors to and from China does not appear, as does another Asian country, Japan.

The migration patterns described for arrival are similar to those for departure. That is to say, as at the regional level, the majority of incoming authors come from countries to which the authors had previously gone, with the difference that many more authors arrive from Spain than migrate there. The phenomenon of diversification of destinations in Bolivia is becoming much more important over time, especially for those who leave the country. There is a particularity regarding internationalization; migration and collaboration towards Latin American countries and the absence of diversification as in the rest of the region (see Graph BO2).

Talent migration: Where are the authors that published in Bolivia going? / Graph BO4



Talent migration: Where are the authors that published in Bolivia going? / Graph BO5

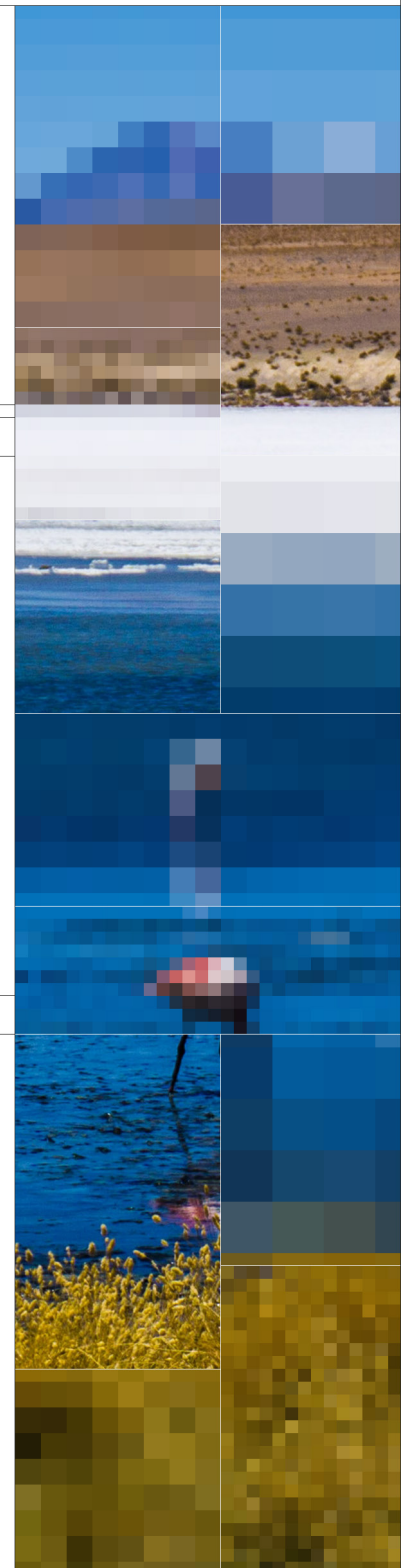
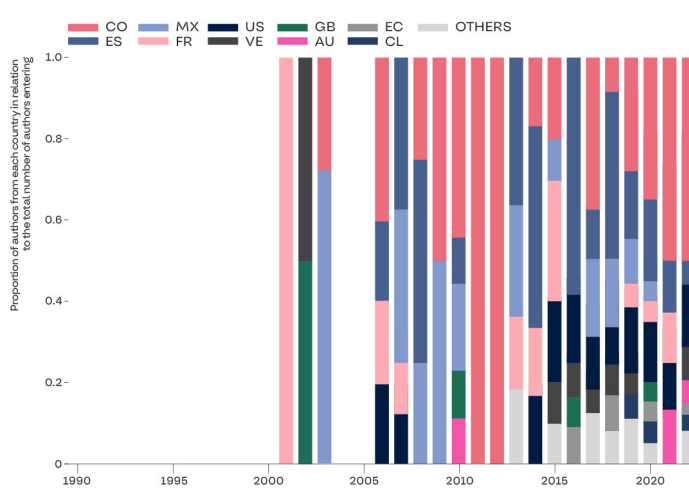


TABLE BO 1 Summary of scores and ranking in each sumdimension and indicators for Bolivia

Dimension	Subdimension	Indicators	Bolivia	LAC Average	Ranking
Enabling factors	Infrastructure	Conectivity	35,06	56,32	10
		Computing	12,70	33,72	12
		Devices	52,28	63,59	10
	Infrastructure average		33,35	51,21	11
	Data	Data barometer	20,81	39,80	12
	Data availability average		20,81	39,80	12
	Talent development	AI literacy	12,50	48,95	5
		AI professional formation	4,25	33,88	9
		Advanced human capital	18,68	28,05	6
	Talent development average		11,81	36,96	11
Enabling factors average		21,99	42,66	12	
Research, development and adoption	Research	Research	42,30	58,47	9
	Research average		42,30	58,47	9
	Innovation and development	Development	14,86	24,76	7
		Innovation	20,67	24,68	3
	Innovation and development average		17,77	24,72	7
	Adoption	Use of AI in companies	11,21	25,79	6
		Public promotion of AI	8,52	50,73	12
Adoption average		9,87	38,26	12	
Research, development and adoption average		23,31	40,48	11	
Governance	Vision and institutionality	AI Strategy	0,00	35,41	8
		Social involvement	0,00	21,87	5
		Institutionality	0,00	43,75	2
	Vision and institutionality average		0,00	33,68	8
	International vinculation average		0,00	45,83	4
	Regulation average		0,00	54,16	5
Governance average		0,00	44,56	10	
AI Index			15,10	42,61	12