



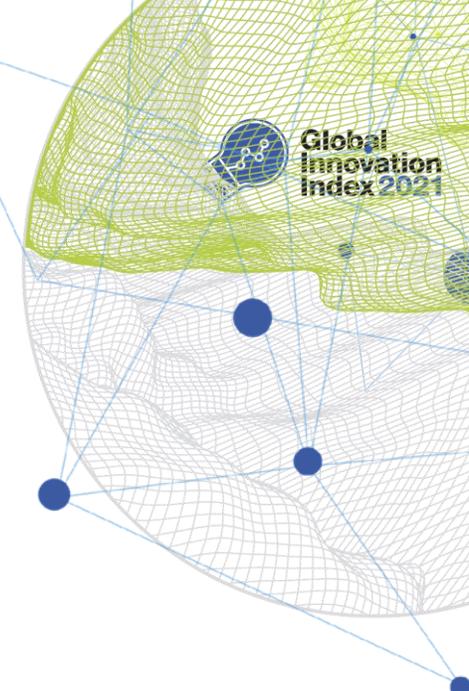
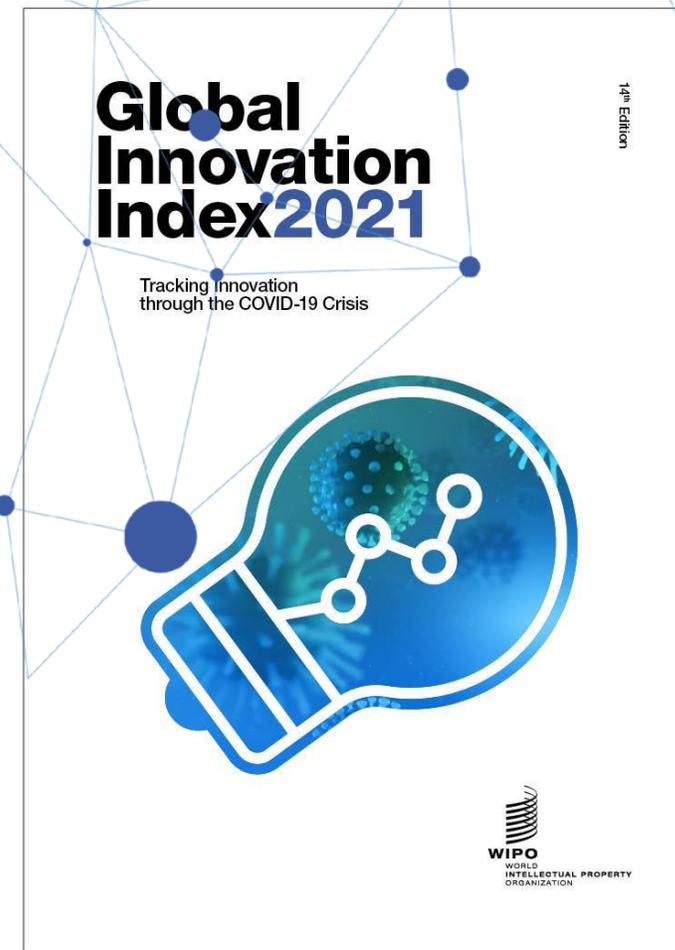
Global Innovation Index 2021

Tracking Innovation through the COVID-19 Crisis

LANÇAMENTO 2021 GLOBAL
INNOVATION INDEX NO BRASIL

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21/9/2021



Brazil in GII 2021

What is Brazil's performance in innovation?

1. Brazil has maintained progress in the GII ranking since 2019



Brazil Movement in GII Rankings, 2019-2021

	GII	Innovation inputs	Innovation outputs
2021	57	56	59
2020	62	59	64
2019	66	60	67

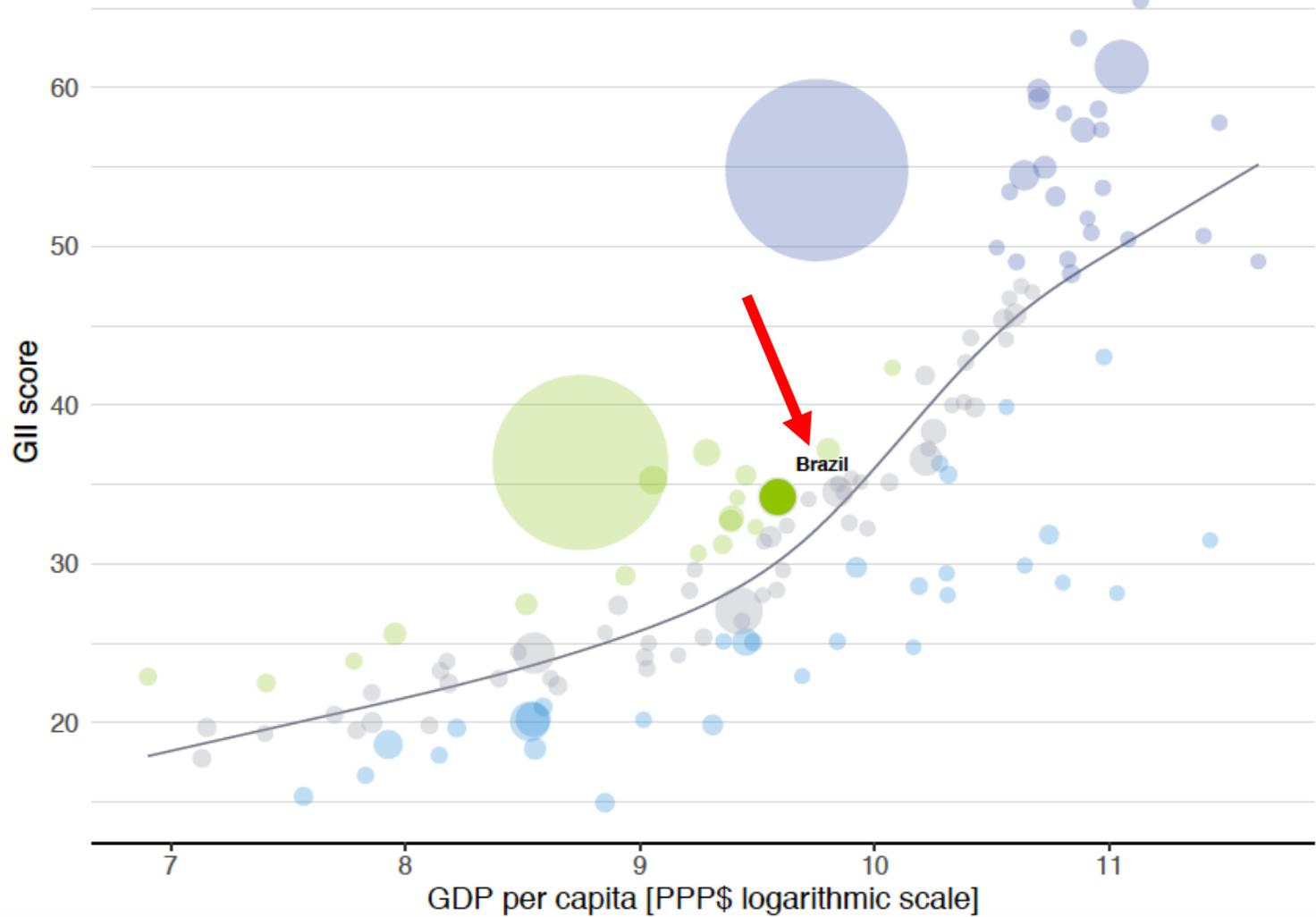
2. Brazil has remained constant in the top 60 in the world



Rank	Top 60	Rank	Top 80	Rank	Top 100	Rank	Top 110
53	Chile	65	Uruguay	83	Panama	101	Guatemala
55	Mexico	67	Colombia	88	Paraguay	104	Bolivia (Plurinational State of)
56	Costa Rica	70	Peru	91	Ecuador	108	Honduras
57	Brazil	73	Argentina	93	Dominican Republic		
		74	Jamaica	96	El Salvador		
				97	Trinidad and Tobago		

Source: Global Innovation Index Database, WIPO, 2021

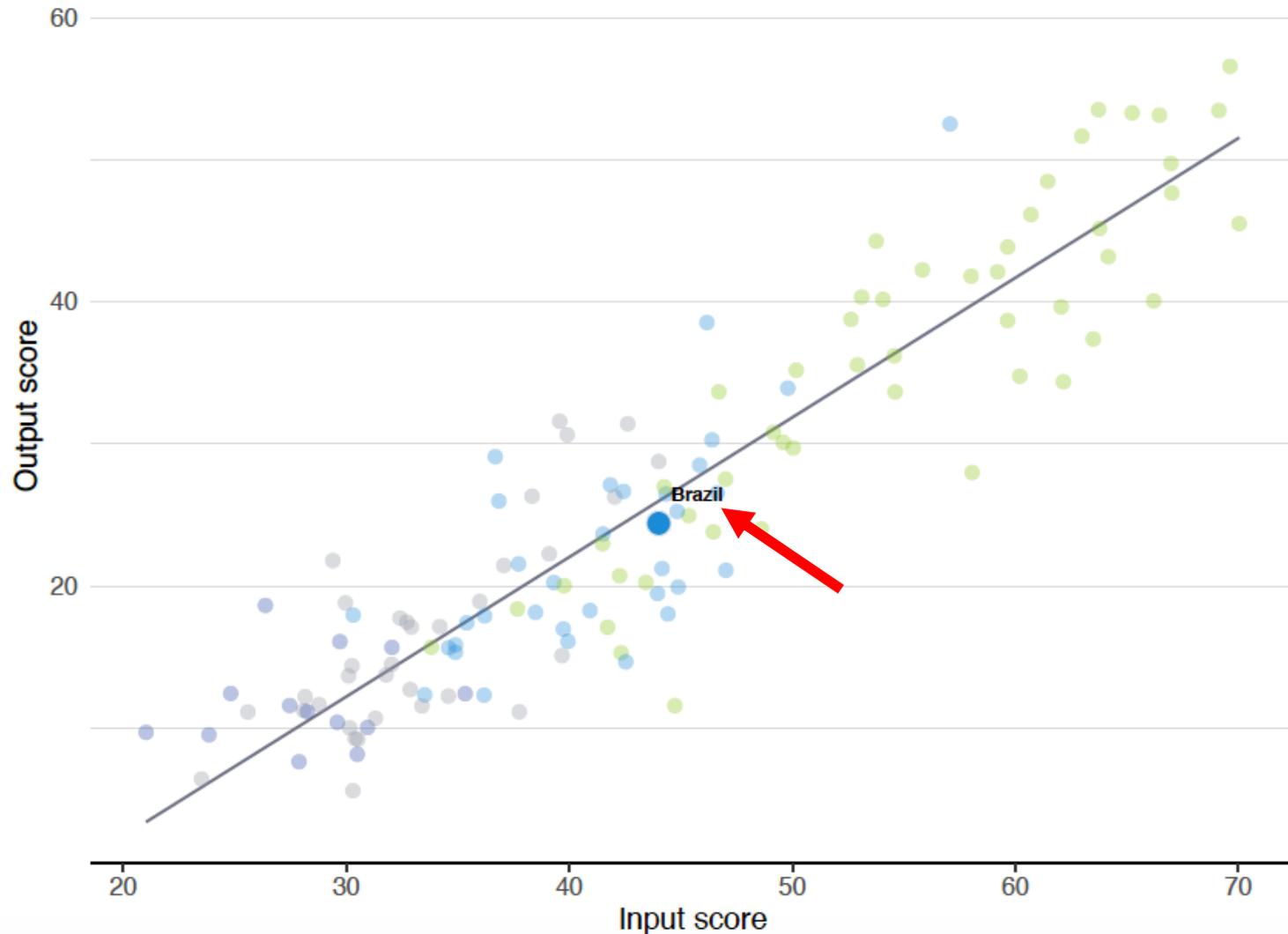
3. The positive relationship between innovation and development



● In relation to GDP, Brazil's performance is above expectations for its level of development.

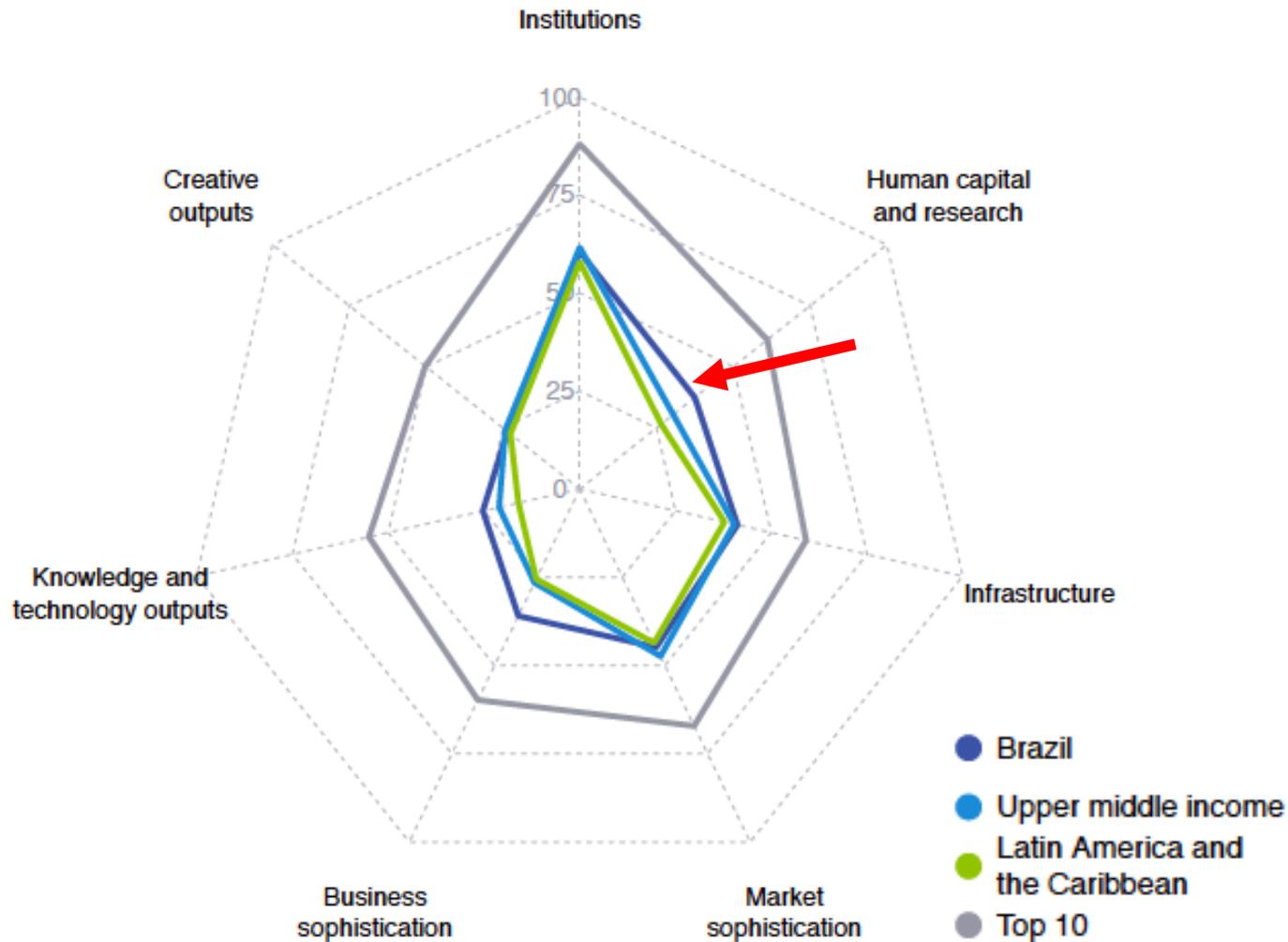
- Innovation leader
- Performing above expectations for level of development
- Performing at expectations for level of development
- Performing below expectations for level of development

4. Innovation input to output performance



- **Brazil produces fewer innovation products relative to its level of investment in innovation.**

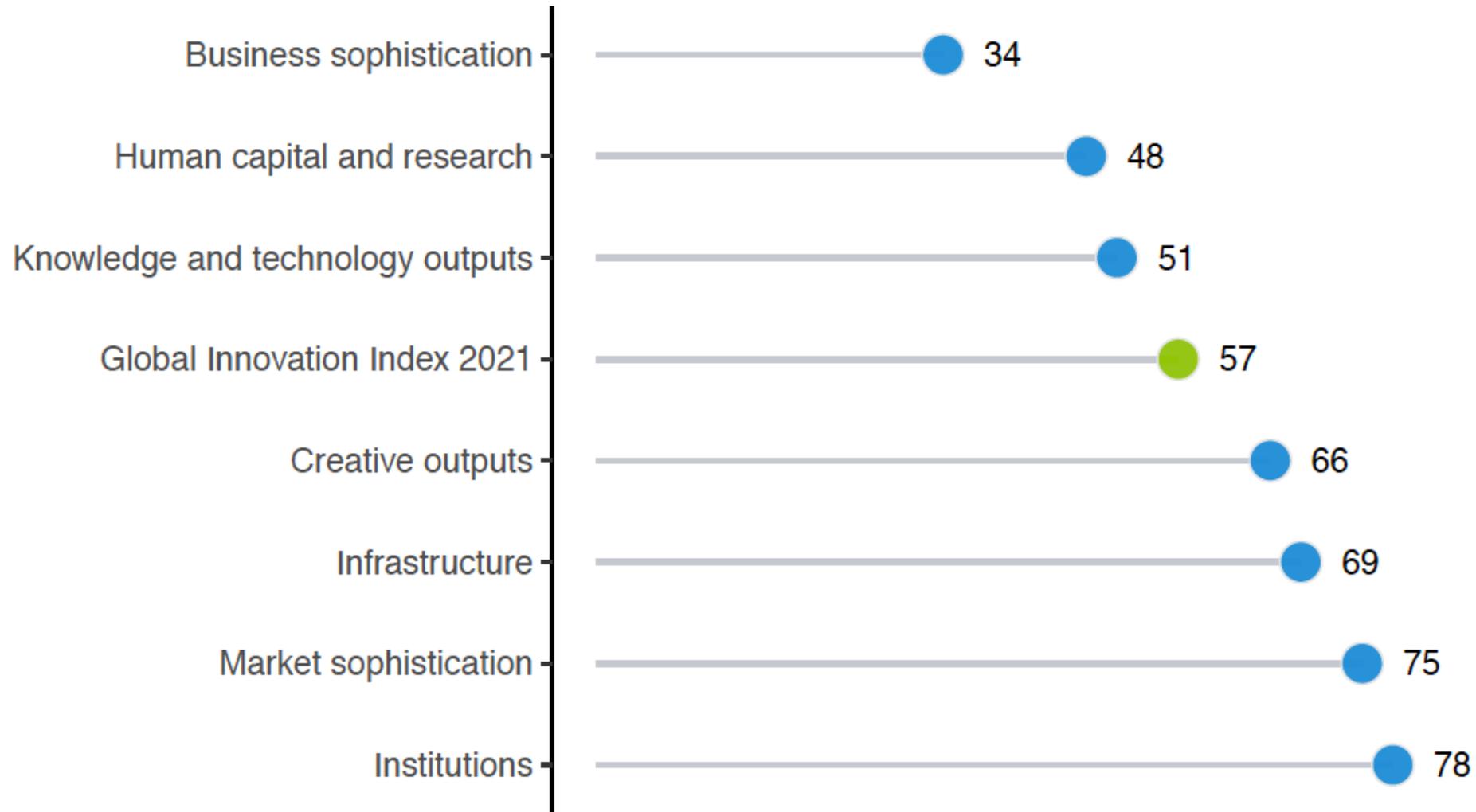
5. Brazil compared to other upper-middle-income and Latin American and Caribbean economies



- Brazil performs above the average of the upper middle income group in 4 pillars
 - Human capital and research
 - Infrastructure
 - Business sophistication
 - Knowledge and technology outputs
- Brazil performs above the regional average in 5 pillars:
 - Human capital and research
 - Infrastructure
 - Market sophistication
 - Business sophistication
 - Knowledge and technology outputs

6. Brazil: performance in pillars of innovation

Brazil has the best performance in business sophistication . Its performance is weaker in terms of institutions.



7. Brazil: strengths and opportunities



Strengths			Opportunities		
Code	Name	Rank	Code	Name	Rank
2.1.1	Expenditure on education, % GDP	11	1.3.1	Ease of starting a business	106
2.3.3	Global corporate R&D investors, top 3, mn US\$	26	2.1.4	PISA scales in reading, maths and science	68
3.1.3	Government's online service	20	2.2.2	Graduates in science and engineering, %	83
3.1.4	E-participation	18	2.2.3	Tertiary inbound mobility, %	104
4.3	Trade, diversification, and market scale	26	3.2	General infrastructure	107
4.3.3	Domestic market scale, bn PPP\$	8	3.2.3	Gross capital formation, % GDP	116
5.3	Knowledge absorption	28	4.1	Credit	103
5.3.1	Intellectual property payments, % total trade	14	4.1.1	Ease of getting credit	94
5.3.2	High-tech imports, % total trade	28	4.2	Investment	99
5.3.3	ICT services imports, % total trade	30	4.3.1	Applied tariff rate, weighted avg., %	102
6.1.5	Citable documents H-index	24	5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	89
7.1.1	Trademarks by origin/bn PPP\$ GDP	27	7.2	Creative goods and services	94
			7.2.2	National feature films/mn pop. 15–69	84
			7.2.4	Printing and other media, % manufacturing	86

Source: Source: Global Innovation Index Database, Portulans Institute, 2017- 2021.

Brazil: Missing data



Code	Indicator name	Economy year	Model year	Source
5.1.2	Firms offering formal training, %	n/a	2019	World Bank
5.1.3	GERD performed by business, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2018	UNESCO Institute for Statistics

Brazil: Outdated data



Code	Indicator name	Economy year	Model year	Source
2.1.5	Pupil-teacher ratio, secondary	2018	2019	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.3.5	Research talent, % in businesses	2014	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators

Key Messages and Recommendations for Brazil

Message 1.1

Investment in innovation and technology go hand-in-hand with competitive levels of innovation

- **Although the percentage of Gross Expenditure on R&D financed by Brazil's government amounts to nearly 50%, this figure represents only about 0.63% of Brazil's GDP, which is almost half in comparison to other developed economies.**
- **Economies like the Republic of Korea, Sweden, and Germany – all top global Innovators – show that the proportion of GERD financed by the government nears 1% of their GDP, all the while showing a total GERD with respect to GDP above 3%.**



Message 1.2

Talent does so as well...

- Brazil's human resource base should keep pace with the rate of technological transformation, and the increasing demand for relevant skills.
 - Only 15% of tertiary graduates in Brazil earn a degree in a STEM field (OECD).
- Directed changes in education policy and funding, particularly in STEM, could help stimulate the progress of R&D in Brazil and empower those entering the workforce.



Message 3

Governments play an active role in financing Science, Technology, and Innovation in some developing economies

- **Brazil displays a GERD as a percentage of Gross Domestic Product (GDP) that is only near 1.3%. While this percentage is above the average of economies from Latin America and the Caribbean featured in this Report (0.4%), it is far from that displayed by its fellow BRICS economy China (2.2%).**
- Priority should be placed on evaluating initiatives to increasing public and private funding for ST&I, as well as ensuring the sustainability of this funding, in order to drive innovation.



Message 4

Balanced and stable markets attract foreign capital investment



Long and complex regulatory processes are a major challenge for entrepreneurs attempting to enter the market, impacting Brazil's innovation landscape.

- Underlying factors can derive from a lack of coordination among federal, state, and municipal agencies, as well as ambiguities and unclear regulations.
- Proactive measures to reduce these factors are:
 - I. Eliminating inconsistencies by establishing clear rules for market entry.
 - II. Improving access to incentive for private investment in R&D.
 - III. Ensuring that federal and state R&D regulatory frameworks remain dynamic and flexible.

Message 5

There are hurdles to financing innovation in Brazil – including investment in infrastructure

- Critical funding gaps remain despite recent policy action.
- Further, the great diversity of investment opportunities in innovative individuals, ideas and companies across different stages of the innovation lifecycle are not sufficiently supported by infrastructure, institutions or security for investors.
- Brazil's relatively high logistics costs reflect an inefficiency that results from high operational expenses (World Bank Logistics Performance Index)
- It is critical to support public sector infrastructure development to ensure the economy has the proper foundations accelerate the recovery as it is underway (World Bank)





General Recommendations

Focus on creating balanced and efficient innovation ecosystems



- Overall, Latin American and Caribbean countries performed strongly in the **Institution** and **Market Sophistication**.
- However, there is opportunity for further growth in **Knowledge and technology outputs**, and **Human capital and research**.
- Focusing on closing gaps between these areas is a promising strategy for both the economy and the region.

Translating innovation inputs into outputs

- Generally, the region produces fewer innovation products relative to its level of investment in innovation.
- Strengthening R&D programs, cross-sector collaboration, as well as innovation policies can help streamline innovation processes.

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