

Why Brazil Doesn't Innovate

A Comparison Among Nations

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The Central Idea

- Published in 2016;
- Main differences between Brazil and other countries, related to innovation;
- Which are the factors that influence innovation more significantly in countries, especially in Brazil;
- Which of them demand for more investments in order to boost technology and innovation.

Def innov

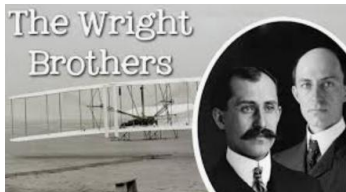
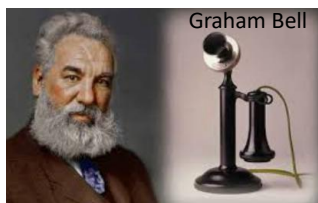
Defining Innovation

- “Practical refining and the development of an original invention to a technique or usable product,
- or as a process in which creativity is applied in all processes of the **value** chain,
- in order to develop new and better ways to create **value** for costumers.”

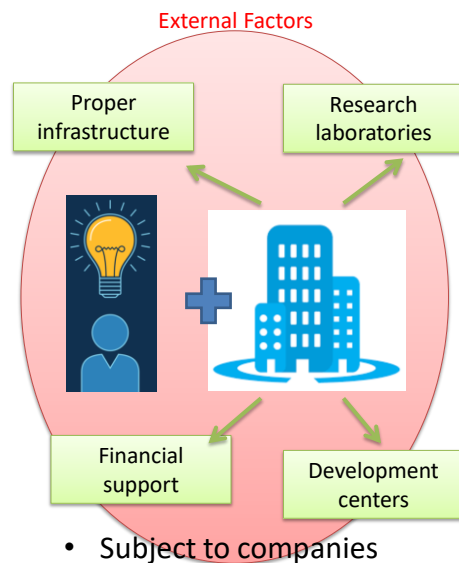
(Maital; Seshadri, 2013)

Inovators

Inventors and Innovators



- Subject to innovative ideas



- Subject to companies

External fact

External Factors

- National policies;
- Economic development;
- Incentive to innovation

Can be the main drivers for the development of innovation in countries

Delay braz

Delay of Innovation in Brazil

- No effective industrial policy that boosts the development of national technologies;
- Low number of patents and scientific publication;
- Low number of students graduated in sciences, technology and engineering;
- No effective support to small and medium-sized companies.

Delay latin

Delay in Latin America

- Occurs due to geographic and microeconomic aspects;
- Not very active in high tech sectors;
- No proper institutional environment for the emergence of innovation;
- Predominance of imported technologies;
- Abundance of natural resources;
- Cheap workforce.

factors

Factors Related to Innovation

1. Number of large companies;
2. GDP per capita;
3. Public expenditures on education;
4. Public expenditures on R&D;
5. Exports of high-tech products;
6. Number of patents.

large

1 - Number of large companies

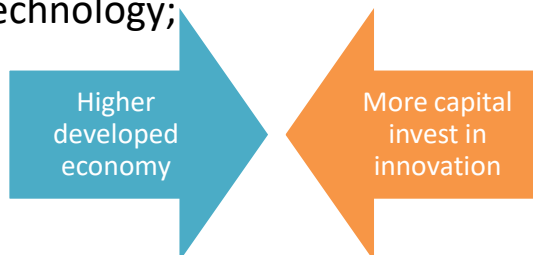
- Large companies innovate the most;
- Due to:
 - Availability of financial resources;
 - Possibility to take risks;
 - Banks hardly finance R&D projects of small/new companies
- Need to be grouped in clusters that influence the emergence of technology and innovation;
- Data used in the paper: 500 Largest Companies in The World:
 - 33 countries
 - 10 from Brazil

AmBev Petrobrás Vale
 Itaú Unibanco Bradesco
 Banco do Brasil Itaú Telef Brasil
 Santander Souza Cruz

gdp

2 - GDP per Capita

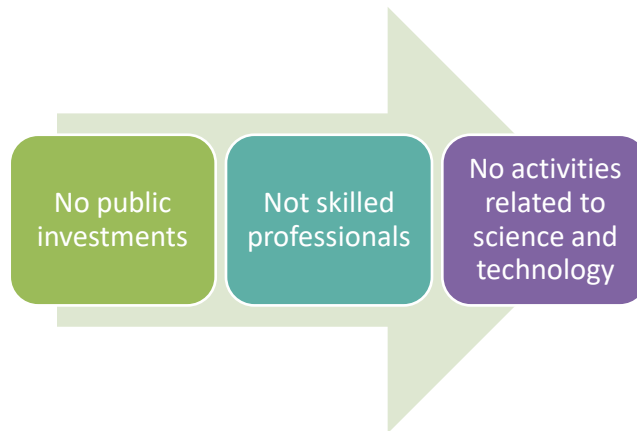
- Strong relationship between increases in GDP and increases of innovation;
- The technological process is crucial for all economic growth process;
- Every change in today's living standards occurs due to technology;



Expedn educ

3 - Public Expenditures on Education

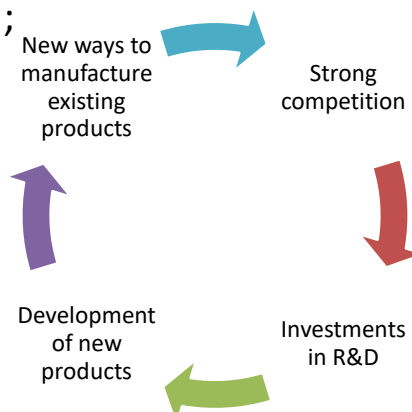
- Invest in the educational system is one of the former stages of skilled human resources;



Expend rec

4 - Public Expenditures on R&D

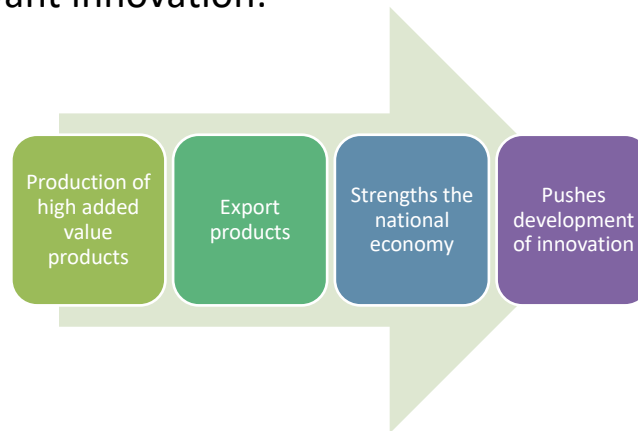
- Expenditures on R&D identify how much a country is willing to invest in innovation;
- Political decisions create an environment for innovation;



exports

5 - Exports of High-tech Products

- Capacity of a nation to generate commercially relevant innovation:



patents

6 - Number of Patents

- Is controversial;
 - Not always indicate something scientific and technologically relevant;
 - Investors chose not to patent their discovers to preserv them from copies.
- Is still one of the most used indicators to evaluate the development of innovation.

Factors brazil

Factors Related to Innovation x Innovation Index

1. Number of large companies:
 - 31,1% smaller than the average;
2. GDP per capita:
 - 69,6% smaller than the average;
3. Public expenditures on education:
 - 14,8% above the average;
4. Public expenditures on R&D:
 - 31,6% smaller than the average.
5. Exports of high-tech products:
 - 32,3% smaller than the average;
6. Number of patents
 - This variable is negatively correlated to innovation, so the report don't go deeper in this analysis.



index

Innovation Index

• Brazil x World

Brazil and the other countries of the sample.

	Innovation ranking	Large companies	GDP per capita	Expenditure/education (%GDP)	Expenditure/R&D (%GDP)	Exports/high-tech (%)	Patents
Brazil	36.33	10	11.208	5.82	1.3	10	3.373
World	49.09	14.51	36.817	4.96	1.9	14.78	220.000

• Brazil x Switzerland

Comparison between Brazil and Switzerland.

	Innovation ranking	Large companies	GDP per capita	Expenditure/education (%GDP)	Expenditure/R&D (%GDP)	Exports/high-tech (%)	Patents
Switzerland	66.59	13	80.528	5.22	3	26	51.693
Brazil	36.3	10	11.208	5.82	1.3	10	3.373

Relevant factors

Most Relevant Factors That Influence Innovation

1. ~~Number of large companies:~~

- ~~• 31,1% smaller than the average;~~

Switzerland	Brazil
13	10

2. GDP per capita:

- 69,6% smaller than the average;

Switzerland	Brazil
80,528	11,208

3. ~~Public expenditures on education:~~

- ~~• 14,8% above the average;~~

Switzerland	Brazil
5,22	5,2

4. Public expenditures on R&D:

- 31,6% smaller than the average.

Switzerland	Brazil
3	1,3

5. Exports of high-tech products:

- 32,3% smaller than the average;

Switzerland	Brazil
26	10

conclusion

Conclusion

- Brazil:
 - Lack of public investments in issues that are relevant for innovation;
 - Lack of commitment of companies in innovating;
 - Bad integration between companies and universities and research centers.
- Descending ranking regarding the relevance of the variables associated with innovation:
 1. GDP per capita
 2. Public expenditures on R&D
 3. Exports of high-tech products
 4. Public expenditures on education
 5. Number of large companies
 6. Number of patents



Government

The power to foster a proper economic environment to the development of innovation

quest

ANY QUESTION?

Thank you.

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