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The Use of Big Data and the Role of Actuaries in Inclusive Insurance Markets

Cristina Mano

Cantanhede Mano Consultoria em Atuária





Agenda

Key Features of the Latin America Caribbean (LAC) Region

Insurance Market in The Latin America Region

Degrees of Maturity of Latin America Market

Micro Insurance: definition, products, regulation

Use of Big Data

Room for growth and innovation

Conclusion



LAC Region

- Consists of more than thirty sovereign states and several territories and dependencies.
- Covers an area of 19.2 million km² from the northern border of Mexico to the southern tip of South America, including the Caribbean.
- Includes almost 13% of the Earth's land surface area with a combined population of 637 million (9%), nominal GDP of 5.5 trillion USD (7%), and a total premium volume of 168 billion USD (3%.)





LAC Region

Worldwide
comparison

	Population millions	GDP USD bn	Premium volume in million USD	Insurance Density	Insurance penetration
America	1.000	26.551	1.664.522	1.657	6,3
North America	363	21.059	1.496.634	4.120	7,1
Latin America and Caribbean	637	5.492	167.888	262	3,1
Europe	823	21.087	1.479.197	1.651	6,5
Western Europe	521	17.964	1.416.184	2.568	7,3
Central and Eastern Europe	302	3.123	63.013	198	1,9
Asia	4.419	28.251	1.590.688	360	5,6
Africa	1.241	2.250	66.691	54	3,0
Oceania	41	1.613	90.597	2.236	5,6
World	7.527	79.752	4.891.694	650	6,2

Notes

Data from Sigma Swiss RE n°3/2018: Worldwide Insurance in 2017

Total premium volume in USD in 2017

Insurance Density: premiums per capita in USD 2017

Insurance penetration: premiums in % of GDP in 2017



LAC Region

Latin America
and Caribbean

Country	Population in million	GDP USD_bn	Premium volume in million of USD	Insurance Density	Insurance penetration
Brazil	209	2.055	83.315	398	4,1
Mexico	129	1.152	25.293	196	2,2
Argentina	44	620	16.435	371	2,7
Colombia	49	309	8.890	181	2,9
Chile	18	272	13.294	736	4,9
Peru	32	213	3.473	108	1,6
Venezuela	32	126	1.714	54	1,4
Ecuador	17	101	2.046	123	2,0
Guatemala	17	77	932	55	1,2
Dominican Republic	11	75	1.040	97	1,4
Uruguay	3	62	1.576	456	2,6
Panama	4	60	1.444	352	2,4
Costa Rica	5	58	1.331	272	2,3
Trinidad and Tobago	1	26	1.062	777	4,1
Jamaica	3	14	732	253	5,1
Bahamas	0	9	780	1.976	8,6
Cayman Islands	0	4	746	12.122	19,6
Other countries	63	259	3.784		
Total	637	5.492	167.887	264	3,1

Notes

Data from Sigma Swiss RE n°3/2018: Worldwide Insurance in 2017

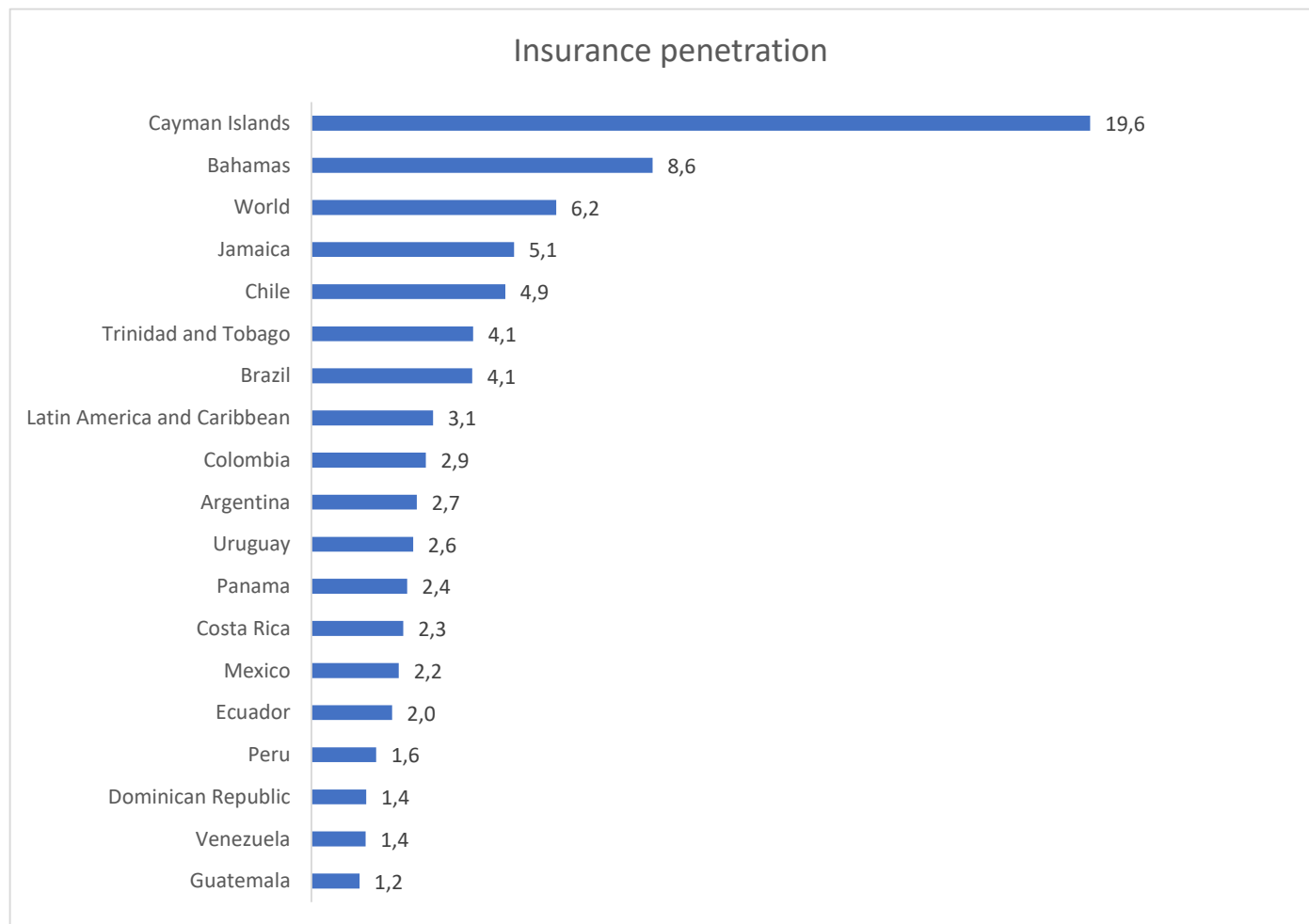
Total premium volume in USD in 2017

Insurance Density: premiums per capita in USD 2017

Insurance penetration: premiums in % of GDP in 2017



LAC Penetration



Notes:

Data from Sigma Swiss RE nº3/2018: Worldwide Insurance in 2017
88 countries considered around the world



LAC Region

Ranking
worldwide

Country	Population	GDP	Premium volume	Insurance Density	Insurance Penetration
Brazil	5	8	12	45	40
Mexico	10	15	26	59	60
Venezuela	34	57	59	77	76
Argentina	41	21	33	48	48
Chile	43	42	37	37	31
Colombia	25	40	43	60	46
Peru	34	49	51	68	70
Ecuador	45	62	57	66	66
Panama	74	70	64	49	53
Uruguay	77	69	63	41	50
Costa Rica	70	71	67	55	56
Trinidad and Tobago	82	81	71	35	39
Guatemala	45	65	77	76	78
Dominican Republic	49	66	72	70	75
Jamaica	77	83	88	57	27
Bahamas	87	86	84	26	12
Cayman Islands	87	88	87	1	2

Notes

Data from Sigma Swiss RE n°3/2018:Worldwide Insurance in 2017

88 countries considered around the world



LAC Region

Number of
Actuaries

Country	Number of actuaries (*)
Brazil	1622
Mexico	500
Argentina	300
Colombia	6
Caribbean	162

Note:

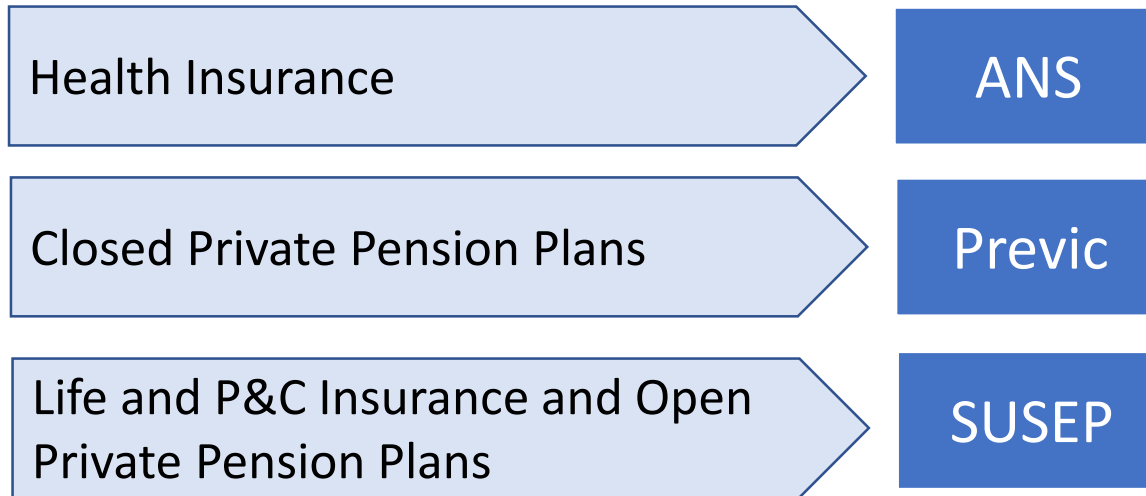
Information from IAA website: www.actuaries.org

(*) actuary with a credential that pays dues > 0; year 2018

- Number of actuaries = actuaries with credentials that pay dues to IAA.
- Chile, Mexico, and Panama also have other actuarial associations not included above.
- The LAC Region needs more local actuaries!



Brazilian Insurance Regulators



The actuaries and the regulators:

- To sign as an actuary, it is necessary to be certificated by the IBA, through one exam after graduation and continued education
- IBA has an Actuarial Pronouncements Committee, with the participation of the Regulators



Degrees of Maturity in Latin American Insurance Markets

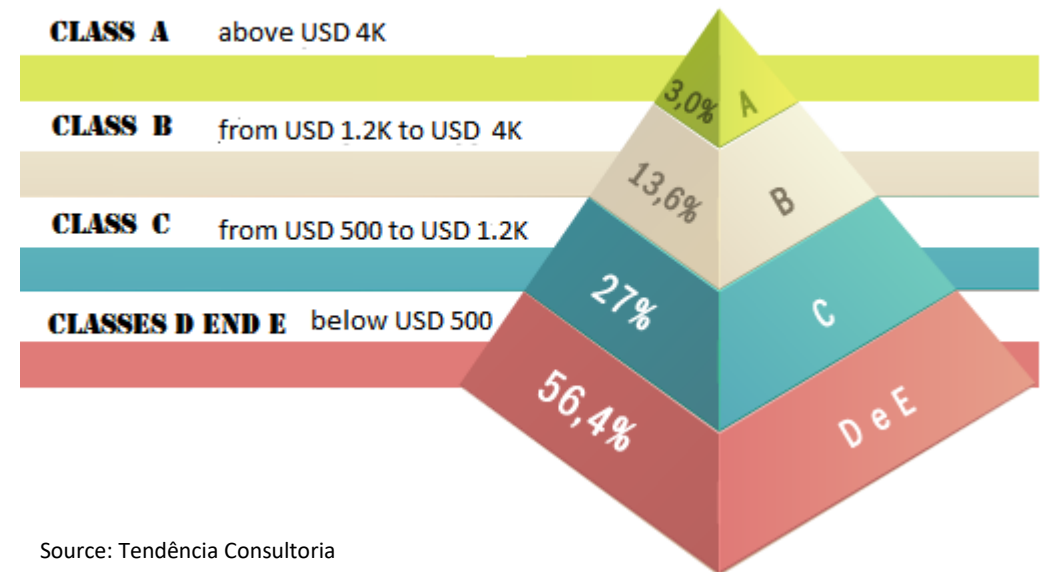
- Economic development
- Prudential regulation
- Underwriting and operational efficiency
- Product approval and innovation
- Distribution channels
- Other structural factors



MicroInsurance

- It is the protection of the low-income population against specific perils in exchange for regular premium payments in proportion to the likelihood and cost of the risk involved.
- This definition is the same of regular insurance except for the prescribed target market: low-income customers.
- Brazil is considered the largest voluntary microinsurance market in the world
 - Voluntary insurance: the individual purchases it on their own

INCOME DISTRIBUTION BY MONTH BRAZIL - 2016



Source: Tendência Consultoria



MicroInsurance Products

- Need to be **SUAVE**
- **Simple**: in benefit structure and have few to no exclusion. Benefits are often a fixed amount.
- **Understood**: If people don't understand the product, they won't buy it.
- **Accessible**: sales need to happen through channels that reach the low-income population, where they are, as cooperatives, input suppliers, microfinance banks or mobile phones.
- **Valuable**: products need to provide clear value both for clientes and for insurers.
- **Efficient**: processes should be efficient and low-cost. This often results in low policy limits. It is importante that claims are paid quickly.

Examples:

- ✓ Funeral insurance
- ✓ Extended Warranties on White Goods
- ✓ Personal Accident
- ✓ Limited Home Insurance

In Brazil: “emphasis in Benefits in Life”

- ✓ Capitalization: lottery component

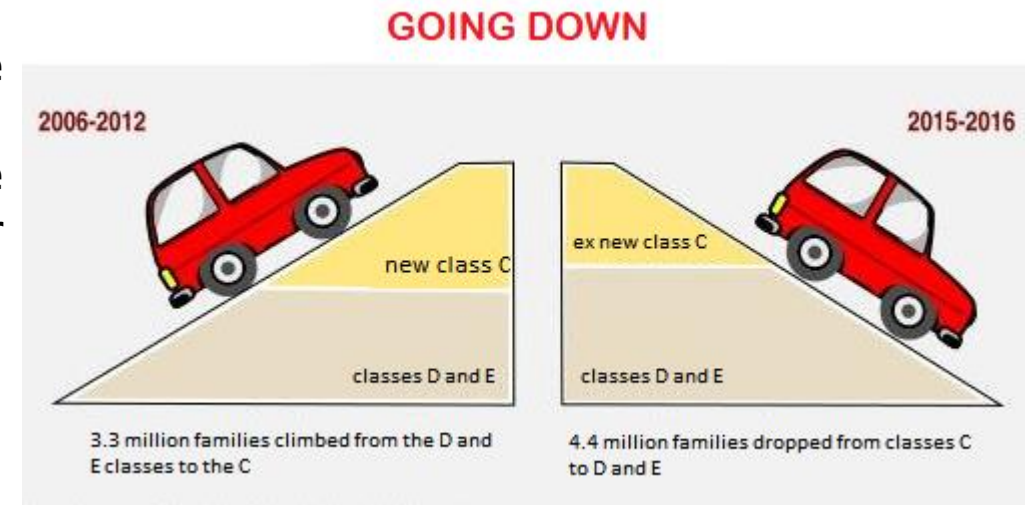


Microinsurance – An Industry Project

- In 2009, the South African Center for Financial Regulation & Inclusion developed a research project regarding Microinsurance in Brazil, in order to search for opportunities for market development.
- In 2010, the Confederation of Brazilian Insurance Companies led a pilot project in a low-income community of Rio de Janeiro to understand the challenges and opportunities for microinsurance.
- The project lasted for 16 months and was based on the promotion of the insurance culture to the population and the comprehension of their needs. After 8 years it became clear that the microinsurance initiative was neither completed nor on the right track.

➤ WHY?

➤ HOW to solve it?



Source: Tendência Consultoria



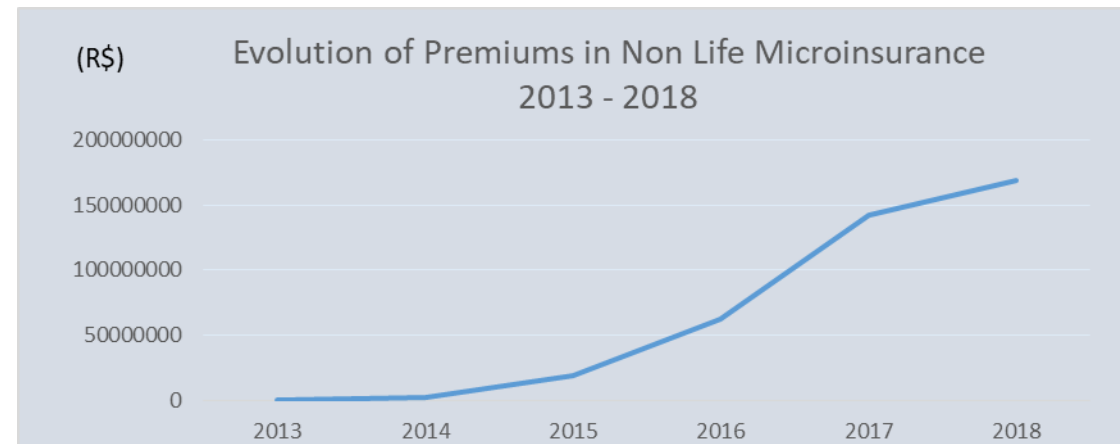
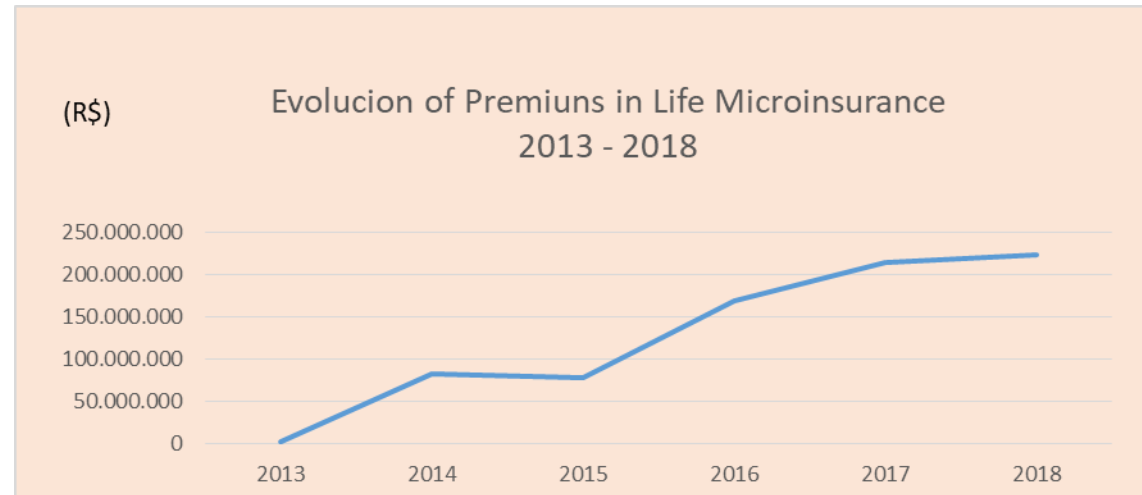
Some Words on Small Insurers and Mutuals

- In Brazil, mutuals are non-profit pension companies which offer insurance services (monthly income or lump sums) for surviving, death or disability.
- Insurance companies, regardless of their sizes, must be constituted as anonymous societies.
- In recent years, small insurers and mutuals have been diminishing in numbers as well as in market share.
- These companies are being absorbed by larger ones or going through resolution processes.
- In cases when resolution was enforced, the root cause observed along the years was not only the pressure of capital and provision requirements, but poor management.



A Few Statistics on Microinsurance

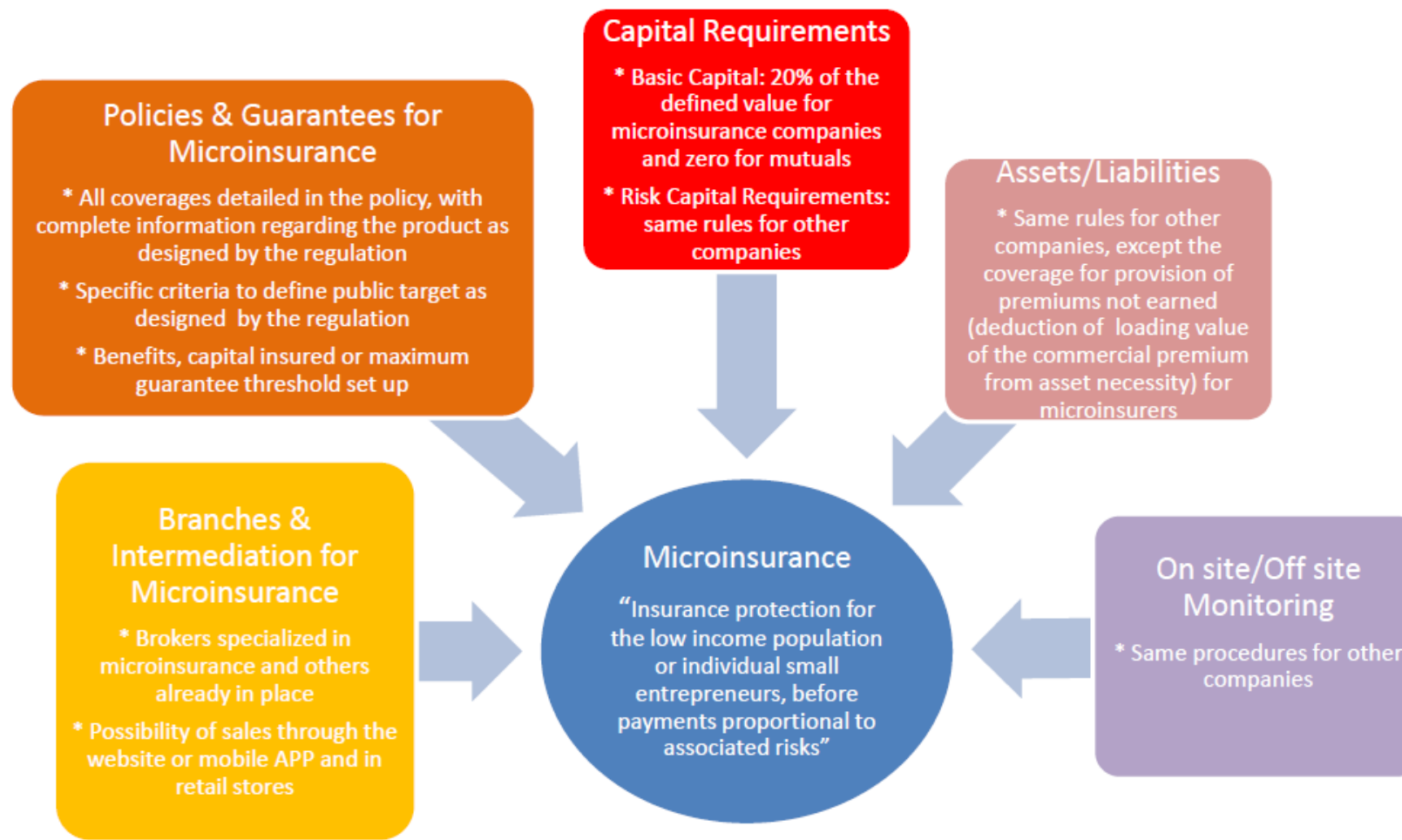
- In 2013, just 3 big companies operated in life microinsurance and 1 in non life. The participation of these lines of businesses (LB), respectively, corresponded to 0,03% and 0 (neglected).
- In 2018, 13 companies are in place for life microinsurance (just 2 are microinsurers) and 10 for non life (none is a microinsurer). The LB corresponds to 0,21% for life and 0,16% for non life of the market share.



Meanwhile, a growing number of the Brazilian population is being covered by informal providers (usually cooperatives) that can be fined by SUSEP.



Risk Based Supervision(RBS) for Smaller Companies





Use of Big Data and Data Science

➤ Big Data and Analytics are the most popular insurance industry buzz word

- ✓ Emerging markets have typically suffered from a lack of traditional data, particularly for low-income consumers
- ✓ The lack of data has meant financial exclusion for many
- ✓ Big data is also opening doors to reach the currently uninsured
- ✓ The potential benefits includes the entire microinsurance product lifecycle
- ✓ Thus far, many insurers do not have even structured data or technical staff capable of utilizing it



<https://www.datascienceacademy.com.br>



Restrictions on the use of Big Data and Data Science

In Brazil: Impacts of the Brazilian Personal Data Protection Law in the insurance market (Law 13.709 / 18)

- With the new Brazilian Personal Data Protection Law, Brazilians will have more control over how their personal information is processed and used by companies and the government

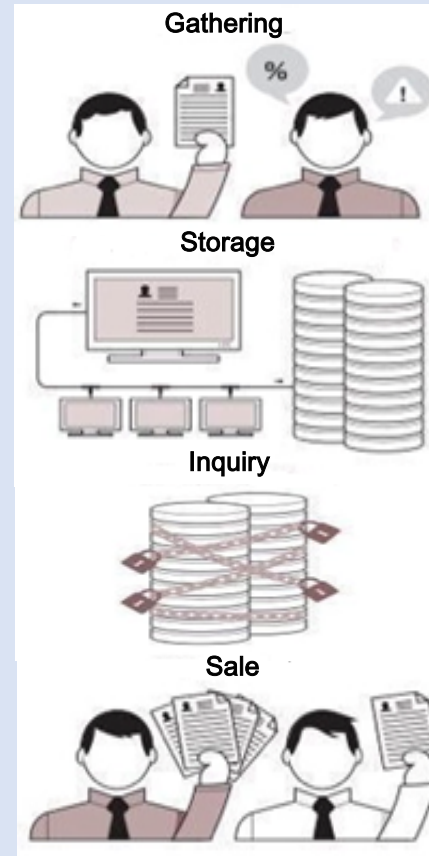
How it is

Companies and governments called operators collect data, with name, age and identification.

The information collected forms a large database of customers, which can be used by operators, with low supervision

Today, citizens' personal information databases are a black box that nobody has access to

As there is no specific punishment today, it is possible for companies to sell data from their customers to third parties.



How it will be

Companies and governments will need to explain how and when data will be used; data collection must have explicit user consent.

The database continues to exist but companies will need to request new users' consent if the information will be used for another purpose.

Users will be able to ask operators for a list of the collected data. It will also be possible to request data correction and deletion.

The sale of data will only be allowed with the authorization of the user. Otherwise, fines may be applied which may reach up to 10 million dollars.



Conclusion

- The world (and insurance) is going digital and what this means for the actuaries is that there is an ability for segmentation in new ways.
- This ability for a differentiated risk selection, which is the biggest benefit of big data for traditional insurance, would minimize the gain of microinsurance
- Big data holds the key for expanding access to microinsurance in developing countries if the challenges can be bridged.
- Actuaries in LAC need to actively consider how to expand their skills sets in Big Data and Data Science to continue to grow and serve the public, employers and the profession.
- Regulators in the region need to work together with insurers and actuaries to understand the power of big data in traditional insurance and in the microinsurance development.



Thank you very much for your attention!!!

Baie dankie!

Muito obrigada!

cristinamano@cmanoatuaria.com



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