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# Evaluation of Regulatory Governance in Consumer Product Safety: comparative analysis between Brazil and Australia

*Avaliação da Governança Regulatória em Segurança de Produtos de Consumo: análise comparativa entre Brasil e Austrália*

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**Abstract:** The purpose of this study is to evaluate the regulatory governance of the federal agency responsible for the regulation of consumer product safety in Brazil (Inmetro), performing a comparative analysis with the Australian consumer product safety regulatory agency (ACCC), taken as a reference. For the development of the research, seven categories of analysis were used: autonomy, transparency, financial independence, clarity of rules, participation, accountability and predictability. The survey results point to a global index of 0,54 for Inmetro and 0,90 for the ACCC, which indicates that the Brazilian agency has a level of regulatory governance below the benchmark chosen in the survey. From the categories analyzed, it was possible to highlight as points of improvement for Inmetro increased stability and predictability of its regulatory system, as well as improves the clarity of your regulatory objectives.

**Keywords:** Consumer Product Safety; Regulation. Regulatory Governance; Comparative Analysis.

**Resumo:** O presente estudo se propõe a avaliar a governança regulatória da autarquia federal responsável pela regulação em segurança de produtos de consumo no Brasil (Inmetro), realizando uma análise comparativa com a agência reguladora em segurança

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de produtos de consumo da Austrália (ACCC), tida como referência. Para o desenvolvimento da pesquisa, foram utilizadas sete categorias de análises: autonomia, transparência, independência financeira, clareza das regras, participação, accountability e previsibilidade. Os resultados da pesquisa apontam um índice global, composto pela média aritmética das pontuações obtidas nas categorias, de 0,54 para o Inmetro e 0,90 para a ACCC, o que indica que a autarquia brasileira apresenta um nível de governança regulatória aquém do benchmark escolhido na pesquisa. A partir das categorias analisadas foi possível destacar como pontos de melhoria para o Inmetro o aumento na estabilidade e previsibilidade do seu sistema regulatório, assim como melhora na clareza de seus objetivos regulatórios.

**Palavras-chave:** Segurança de Produtos de Consumo; Regulação. Governança Regulatória; Análise Comparativa.

## **1. Introduction**

The globalization phenomenon and technological advances brought a great growth in commercial and economic relations between countries, as well as an increase in the consumption of products. But it is necessary to take into account that the opening to international trade, in addition to having allowed greater access to the supply of products, also provided greater exposure to the risks inherent to them, often unknown by the population and by government control bodies (ALVES ET AL, 2015). It becomes, therefore, a crucial point to know if the products available for consumption are safe or if they represent a danger to consumers (ZAKARIA, 2013).

The safety of consumer products refers to the regulatory control exercised by government authorities, working as a preventive measure especially for consumers, who will hardly be able to foresee the risks of products introduced into the market at all times. This regulatory control, through product safety regulation, aims to prevent products that offer risks from reaching the market and the consumer, supported only by the manufacturers' claims regarding their safety and efficacy, in addition to informing the user how to use products safely as intended (ZAKARIA, 2012).

Although regulatory practice is the central locus of the current debate on good practices in consumer product regulation, the Organization for Economic Cooperation and Development (OECD) has emphasized the prominent role of regulatory governance within the agenda also known as good regulatory practices (better regulation) for the effectiveness of regulation (OECD, 1995; OECD, 2005). Levi-Faur (2011) highlights that much of the academic and public discussion on regulation today deals with the governance of regulation (or regulation of regulation), as the growth in the scope and

number of regulations raises questions of effectiveness as well as issues of democratic control.

What is observed both in consumer product safety research and in regulation and regulatory governance research is that the two themes have not often crossed, at least in academic literature. As an example, in the recent comparative analysis conducted by Jordana, Fernández-I-Marín and Bianculli (2018) on institutional characteristics of regulatory agencies, including among these characteristics various aspects of regulatory governance, despite the scope of the study (799 regulatory agencies in 115 countries and 17 sectors), the regulation of consumer product safety was not included in the survey. The low interest in the literature in the analysis of regulatory governance of product safety regulation would not have a plausible a priori justification, especially when considering the potential impact of this type of regulation on the economy and society (COLLOVÀ, 2014).

This research aims to assess the regulatory governance of the National Institute of Metrology, Quality and Technology (Inmetro), a federal agency created by Law No. 5966, of December 11, 1973, responsible for regulating the safety of consumer products in Brazil. The study intends to identify the extent to which the regulatory governance exercised by the Institute is adequate for the fulfillment of its objectives, regarding the regulation of consumer product safety, as well as contributing to filling the gap in the literature of the absence of works that analyze the regulatory governance of product safety regulatory systems.

This study also intends to assess the regulatory governance of the Australian Competition and Consumer Commission (ACCC), an Australian consumer products regulator, taken as a reference, and carry out a comparative analysis of the results found, in order to identify possible improvements for regulatory governance of the Inmetro. The choice of ACCC is justified for three reasons in particular: the history of the institution with the theme (BRAITHWAITE AND VALE, 1985), the similarity of the regulatory model of Inmetro and ACCC and the position of Australia in the ranking of regulatory quality of the world bank (KAUFMANN, D., KRAAY, A., & MASTRUZZIN, M., 2015).

This article is structured in 5 parts, the first of which is this introductory part. The second part provides a brief explanation of the pillars of this research, namely: consumer product safety, regulation and regulatory governance. The third part focuses on the details

of existing regulatory governance assessment methodologies, selection and definition of the methodology followed for the assessment of regulatory governance of the consumer product safety regulation of Inmetro and ACCC. The fourth part presents and discusses the results found. Finally, the fifth part is dedicated to the final considerations of the research and suggestions for future work.

## **2. Literature Review**

The aim of this second part of the article is to present the state of the art of the themes of this research, namely, consumer product safety, regulation and regulatory governance. The aim is to present the different points of view found in similar research on these themes, seeking to provide a theoretical basis for the issues to be addressed, as well as contributions to the research carried out.

### *2.1. Consumer Product Safety*

When talking about the safety of consumer products, we refer to the attention given by the public and public authorities regarding accidents caused by products that pose risks. In turn, product safety regulation refers to the use of regulatory instruments to prevent dangerous products from being placed on the market and causing consumer accidents (NOGUEIRA, 2016).

Within the scope of public action aimed at promoting the safety of consumer products, two major strategies can be distinguished: the first refers to product liability rules, which aim, via private law, to reduce consumer accidents through post liability factum, that is, by repairing the damage that occurred to the consumer (ZAKARIA, 2012). The second comprises properly the regulation of consumer product safety, which encompasses the use of normative and non-normative instruments to prevent consumption accidents from occurring, in a preventive manner (NOGUEIRA, 2016).

Product liability rules are primarily intended to repair the damage suffered by consumers of defective products, via compensation, in addition to creating incentives for producers to manufacture safe products (ZAKARIA, 2012). In an important work on the subject, Cartwright (2007) points out four main limitations to this strategy, listed below.

The first limitation refers to the enforcement of private law, which only occurs when the injured party makes a statement. The second limitation is that private law only solves the problem after the damage has already occurred, that is, it acts to mitigate the damage through compensation, not preventing, therefore, the dangerous product from

reaching the market. The third limitation concerns externalities, that is, people who were not the purchasers of the product, a third party, can consume or use it and suffer damage, but cannot file a lawsuit. The fourth and last limitation, which complements the previous one, refers to the contract law. A contract, as a general rule, only confers rights or imposes obligations on the parties involved (CARTWRIGHT, 2007).

Unlike product liability, product safety regulation works as a preventive measure, seeking to prevent dangerous products from reaching consumers. However, it is not possible to completely eliminate the danger presented by the products. It is then inferred what is the acceptable risk level of the products and, from that, it is defined which should or should not circulate freely in the market. In addition, it seeks to inform users about potential risks of products and how to use them safely and as intended (ZAKARIA, 2012).

The mechanisms used by product safety regulation aim to impose rules on producers, distributors and retailers that lead them to create procedures for monitoring, detecting and reacting to product-related hazards. With this, the concern is no longer just with the manufacture of products, but also with their marketing (ZAKARIA, 2012).

Some of the regulatory controls in place capable of mitigating potential risks are pre-market obligations, which include prior approval, usually carried out through licensing requirements and rules that create standards, and post-market obligations, which refer to monitoring and ensuring that actions, such as notifying and withdrawing unsafe products from the market, can be taken after hazards are identified. In addition, there are also some important instruments in the regulation of product safety, such as information regulation, risk assessment, supply chain accountability and the precautionary principle (ZAKARIA, 2012).

It turns out that private law alone does not produce a perfect solution, making additional regulatory control based on public law regulation necessary. Furthermore, even though the manufacturer, distributor and even the retailer may suffer financially, it is ultimately the injured consumer who suffers the physical damage. Thus, it is possible to affirm that product safety regulation and product responsibility complement each other (ZAKARIA, 2012).

## *2.2.Regulation*

The regulation area has witnessed considerable maturation in recent decades. Since the 1970s, with the introduction of the “economic theory of regulation”, regulation has become a field of practice and research, expanding particularly in the 1980s and

1990s. There has been a proliferation of regulatory bodies that have been established throughout the world, the language of regulation became pervasive in public and academic discourse, and the effectiveness of different modes and tools of regulation was part of public scrutiny, particularly in the context of the financial crisis, environmental catastrophes and food and drug safety (KOOP and LODGE, 2017). The growth of research and debate around the subject brought a multiplicity of meanings to the term regulation.

Levi-Faur (2011) postulates that, like many other political concepts, regulation is difficult to define, not least because it means different things to different people. The term is used for a myriad of discursive, theoretical, and analytical purposes that call for clarification and mapping. Depending on the field of knowledge and ideological current, regulation receives different meanings and purposes. To cite two opposite poles, for the far right it is a “dirty” word that represents the heavy hand of authoritarian governments and the body of rules that restrict human or national freedoms. For the old left, it is an instrument of political domination by the bourgeoisie insofar as they make up the superstructure of the State (LEVI-FAUR, 2011).

In a conceptual review work carried out by Koop and Lodge (2017), in which they assess how regulation is conceived in the most cited articles in six science disciplines, the authors distinguish the variety of concepts based on five characteristics: (i) intentionality of intervention (whether it includes only intentionally formulated rules to achieve certain ends, or includes any system of rules that influence behavior); (ii) scope and specificity of the intervention (whether it includes only direct or indirect intervention); (iii) nature of the regulator (whether or not regulation is carried out only by state actors); (iv) nature of the regulatory activity (whether it includes only the regulation of economic activities or also the regulation that seeks to remodel social relations not characterized as an economic exchange relation) and; (v) separation between the regulator and the regulated (whether or not they are separate actors).

In search of consensus on the concept of regulation, the authors analyzed 101 articles from different fields of knowledge based on the aforementioned criteria and arrived at two concepts: the first, classified as a "essence-based" concept (capturing the minimum essence of the concept, that is, what all scientific works include), defines regulation as intentional intervention in the activities of a target population. It is a definition that includes in the concept of regulation indirect interventions (for example,

regulation based on incentives, such as fees, subsidies, etc.), non-mandatory rules (that is, not subject to sanctions in case of non-compliance), exercised by non-compliance, that regulate not only the private sectors (KOOP and LODGE, 2017).

The second concept, classified as "standards-based" (includes the attributes considered most central to the concept), defines regulation as intervention in the activities of a target population, where intervention is typically direct - involving the establishment of binding norms, monitoring and sanctioning - and is exercised by public sector actors on the economic activities of private sector actors (KOOP and LODGE, 2017).

A definition that encompasses the expanded concept of regulation and the multiplicity of actors involved in regulatory systems is proposed by Scott (2001) as "any process or set of processes by which norms are established, the behavior of those subject to the norms is monitored and for which mechanisms exist to maintain the behavior of regulated actors within the system" (SCOTT, 2001, p.283, with adaptations). The author is interested in demonstrating that in practice, in real regulatory systems, the separation between the regulators (that is, the agents who create the rules and monitor and induce their compliance) and the regulated is not so clear (SCOTT, 2001).

In summary, the term regulation varies from a restricted concept, direct and intentional interventions carried out by state entities on economic activity, to an expanded concept, encompassing other types of (indirect) intervention carried out by state and non-state entities on economic and non-economical. The expanded concept encompasses complex regulatory systems, in which there are multiple actors playing different roles, whether in defining rules or monitoring and inducing behavior change.

The concept of regulation brings implications and challenges for regulatory governance, as it expands or reduces the set of actors that it intends to "govern", as will be seen below.

### *2.3. Regulatory Governance*

The term regulatory governance has been widely used internationally, but without a clear and uniform concept (KJAER and VETTERLEIN, 2018; LOBEL, 2012). There is little concern in the literature with its definition and, in many cases, the meaning and purpose of the use of the term (regulatory governance) has been confused with terms such as "better regulation", regulatory quality and even with the very concept of regulation in its multiple facets (KJAER and VETTERLEIN, 2018).

Within the OECD, the term "regulatory governance" has evoked a set of regulatory practices and tools typical of the movement known as "better regulation", such as regulatory impact analysis, ex-post evaluation and stakeholder engagement in the regulatory process (LEE, 2017). With the exception of studies on the assessment of regulatory systems, the technical and academic works that address the topic are not concerned with a more precise definition in the use of the term "regulatory governance" (OECD, 1995; OECD, 2005; OECD, 2012, JORDANA E SANCHO, 2004). The very scope and nature of what is meant by regulation has implications for how the issue of regulatory governance is inserted in the debate on regulation.

Given this scenario, it is beyond the scope of this research to propose a definition that encompasses the multiple concepts and implications of the use of the term "regulatory governance", in line with what Koop and Lodge (2017) did for the term "regulation". It is sufficient, for the purpose of this study, to start with the concept of regulatory governance from the literature on the assessment of regulatory systems inaugurated by Levy and Spiller (1994), in which regulatory governance is one of two components that make up the regulatory system, including also the regulatory substance, the two being considered with equal weights (LEVY and SPILLER, 1994)<sup>4</sup>.

The authors define the regulatory structure of a regulatory system (that is, regulatory governance in the terms worked here) as "the mechanisms that societies use to restrict regulatory discretion and resolve conflicts that arise in relation to these restrictions" (LEVY and SPILLER, 1994, p.205). This conception has been the basis of several later theoretical and empirical works dedicated to the assessment of regulatory systems (BROWN ET AL, 2006; KAPIKA and EBERHARD, 2010; WAVERMAN and KOUTROUMPIS, 2011).

In this approach, regulatory governance is the "how" of regulation, that is, it concerns the institutional and legal design of the regulatory system and the structure within which decisions are taken. It involves the relationship between the regulator and policymakers; the independence and responsibility of the regulator; the process, transparency and predictability of decision making; the organizational structure and the resources of the regulator (BROWN ET AL, 2006).

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<sup>4</sup> In the original version, the term used by the actors was "regulatory incentives" instead of "regulatory substance". However, in later literature, the second term prevailed (BROWN ET AL, 2006; HALLUR, FIRAKE AND AGARWAL, 2014).



Regulatory substance is defined as the “what” of regulation, that is, it refers to the content of regulation, which involves actual justified decisions, explicit or implicit, made by regulatory bodies or other government agents (BROWN ET AL, 2006). It encompasses the formal rules, regulations, laws, norms, values and principles applied, in addition to covering the design of regulatory incentives and the models that define the rules of the game for public service providers (JARVIS E SOVACOOOL, 2011).

In contrast to regulatory governance, the framework of regulatory substance has been the central concern in most existing theoretical work on regulation. However, studies indicate that such emphasis is inadequate. Although the regulatory substance does affect institutional performance, its impact (positive or negative) only appears if regulatory governance is correctly structured (BROWN ET AL, 2006).

The concept of regulatory governance as the regulation of regulators is also worked on by the OECD (2014) and other publications. The OECD emphasizes that good regulation depends on “the development of a consistent policy that covers the role and functions of regulatory agencies, in order to provide greater confidence that regulatory decisions are taken in an objective, impartial and consistent manner, without conflicting interests” (OECD, 2012, p.4). It also reinforces that “strengthening the governance of regulators will help maintain the confidence of those being regulated and the community in general” (OECD, 2014, p.4).

In empirical works in the regulatory governance assessment literature, the sectors surveyed were electricity, natural gas, telecommunications, railways, land transport, waterway transport, general transport and other transport industries; water and sewage, ore and coal, among others. No studies were found for the regulation of product safety.

There is clearly a greater concern regarding the governance of the regulation of natural monopolies, perhaps a reflection of the concern to provide security for private investments in sectors with strong state control (VISCUSI et al, 2005). In fact, this literature had its origin in the concern with telecommunications regulatory systems (LEVY and SPILLER, 1994), even though the problem of regulatory governance (regulation of regulators) is of a general order for any regulatory system.

### **3. Research Methodology**

For the development of this research, the existing regulatory governance assessment methodologies were first identified, through the search for studies available in academic bases, and those that carried out the assessment of regulatory governance

empirically were selected. As Marques and Pinto (2018) point out, “although the literature on regulatory governance is somewhat extensive, there are some gaps to overcome. There are few empirical studies analyzing and measuring the performance of regulatory agencies.” (MARQUES and PINTO, 2018, p.2).

It is important to highlight that the theoretical line used in this research comprised the works that evaluated the regulatory system from two components: regulatory governance and regulatory substance (LEVY and SPILLER, 1994; BROWN ET AL, 2006). The option for this line of research is justified by the fact that it establishes a concrete link between governance and regulatory performance, whose assessment is operationalized through analysis categories and the evaluation methods of these categories.

The second step was the comparison of the regulatory governance assessment methodologies found, by comparing the regulatory governance analysis categories and the regulatory governance assessment methods used in each study. Then, the methodology that best applied to this research was selected and used as the main reference. Finally, the regulatory governance assessment methodology defined for this study was applied, aiming to assess regulatory governance with regard to the safety regulation of consumer products by Inmetro and ACCC.

### *3.1. Identification and Comparison of Regulatory Governance Assessment Methodologies*

Aiming to identify the existing regulatory governance assessment methodologies, a search was carried out in some academic bases and nine articles were selected that fit the research line of this study, as highlighted in Table 1. It was possible to see that the analyzed studies used different methodological approaches, composed of various combinations of regulatory governance analysis categories and different assessment methods.

**Table 01: Regulatory Governance Studies**

Regulatory Governance Assessment						
Article	Authors	Year	Analysis Sector	Methodologies		
				Analysis Categories	Assessment Method	
1	Comparative Analysis of Regulatory Frameworks: A Study of Three Sector Regulators in India	Giri Hallur, Vinita Kirakeb, Tanu Agarwal	2014	Electricity, telecommunications, insurance development	<b>Institutional regulatory framework</b> 1) Number of constitutional bodies involved 2) Division of authority and scope of the regulator 3) Duplication of functions 4) Role of the Ministry and bureaucracy 5) Office of the Ombudsman / Consumer Protection Policy and regulation formation process 6) Stakeholder involvement (participation) 7) Transparency in the policy formation process 8) Self-regulation <b>Autonomy for the regulator</b> 9) Financial Autonomy 10) Recruitment Process of Senior Officials of the Regulator 11) Autonomy for recruitment 12) Representation of interested parties in the regulator's employees	- comparative analysis - Qualitative analysis - Comparison by category - No ranking
2	Benchmarking telecoms regulation – The Telecommunications Regulatory Governance Index (TRGI)	Leonard Waverman, Pantelis Koutrompiss	2011	Telecommunications	1) Regulatory transparency 2) Independence (autonomy) 3) Availability of resources (financial independence) 4) Supervision of graduates 5) Income per capita	- Comparative analysis - Quantitative analysis - Global comparison - Ranked
3	Assessing regulatory performance: The case of the Namibian electricity supply industry	Joseph Kapika, Anton Eberhard	2010	Electricity	1) Clarity of rules and functions 2) Independence in decision making 3) Financial independence 4) Accountability 5) Transparency 6) Predictability 7) Proportionality 8) Credibility, legitimacy and transparency of regulatory decisions	- Single analysis - Qualitative analysis
4	Regulatory governance: criteria for assessing the performance of regulatory systems An application to infrastructure industries in the developing countries of Asia	Jon Stern, Stuart Holder	1999	Electricity, natural gas, telecommunications, railways and other transport industries, water and sewage	<b>Formal aspects:</b> 1) Clarity of rules and objectives 2) Autonomy 3) Accountability <b>Informal aspects:</b> 4) Participation 5) Transparency 6) Predictability	- comparative analysis - Qualitative analysis - Comparison by category - No ranking
5	How to watch the watchmen? The role and measurement of regulatory governance	Rui Cunha Marques, Francisco Silva Pinto	2018	Energy, telecommunications, transport, water and waste	<b>Internal:</b> 1) Transparency 2) Predictability 3) Consistency and proportionality 4) Integrity <b>External:</b> 5) Clarity of Rules 6) Regulatory Coordination 7) Authority (Autonomy) <b>Relational:</b> 8) Autonomy (financial independence) 9) Public Participation 10) Accountability	- Comparative analysis - Quantitative analysis - Comparison by category and global - Ranked
6	Lesotho telecommunications sector reform: an assessment of regulatory governance and substance	Leboli Zachia Thamae	2015	Telecommunications	1) Clarity of rules 2) Regulatory coordination 3) Autonomy 4) Accountability 5) Transparency 6) Participation 7) Financial independence	- Single analysis - Qualitative analysis
7	Moving beyond dichotomy: Comparing composite telecommunications regulatory governance indices	Brandie L. Martin, Krishna Jayakar	2013	Telecommunications	<b>32 variables focusing on autonomy and transparency</b>	- Comparative analysis - Quantitative analysis - Comparison by category and global - No ranking
8	Patience is a virtue: Problems of regulatory governance in the Indonesian mining sector	Terry O'Callaghan	2010	Ore and Coal	1) Clarity of rules and objectives 2) Autonomy 3) Participation 4) Accountability 5) Transparency 6) Predictability	- Single analysis - Qualitative analysis

Source: Authors (2020)

Comparing the articles, it appears that the most discussed categories of regulatory governance analysis were autonomy, transparency, financial independence, clarity of rules, participation, accountability and predictability. As shown in Table 2, it can be seen that the categories autonomy and transparency were used in practically all studies. The categories financial independence, clarity of rules, participation and accountability were used in 67% of the studies, and study 5 was the only one that used all categories.

**Table 02:** Comparison of Regulatory Governance Analysis Categories

Analysis Categories	Studies									Total
	1	2	3	4	5	6	7	8	9	
<i>Autonomy</i>	X	X	X	X	X	X	X	X	X	9
<i>Transparency</i>	X	X	X	X	X	X	X	X		8
<i>Financial Independence</i>	X	X	X		X	X			X	6
<i>Clarity of Rules</i>			X	X	X	X		X	X	6
<i>Participation</i>	X			X	X	X		X	X	6
<i>Accountability</i>			X	X	X	X		X	X	6
<i>Predictability</i>			X	X	X			X		4
<b>Total</b>	<b>4</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>6</b>	<b>5</b>	

Source: Authors (2020)

Based on the definitions found in the analyzed articles and in Brown et al (2006) and aiming to obtain a harmonization, the concepts of the analysis categories that will be considered in this research were defined in Table 3.

**Table 03:** Definition of Regulatory Governance Analysis Categories

Analysis Categories	Definitions
<i>Autonomy</i>	It is related to the decision-making capacity of the regulatory authority based on its relationship with the government. Checks whether the role of the regulator is just a consultative role or whether it has a decision-making role, that is, whether the regulatory authority reports to the government or whether there is an absence of any type of political oversight, either to define its personnel structure (appointment, promotion, termination), or to carry out its regulatory activities.
<i>Transparency</i>	The entire regulatory process must be fair and impartial and open to public participation. All documents and information used to make decisions must be available for public scrutiny. Transparency is crucial to investor confidence and is closely related to the responsibility of specific regulatory agencies and the performance of their functions.

<b><i>Financial Independence</i></b> <sup>5</sup>	It refers to how the regulatory body is financed, that is, if it has sufficient financial resources to carry out its activity or if someone has to finance or approve its budget. It also refers to the regulator's ability to determine its expenses and manage its resources.
<b><i>Clarity of Rules</i></b>	It refers to the clarity of roles and responsibilities assigned to the regulatory body. Good regulatory performance requires clearly demarcated territory to ensure that there is no overlap or confusion between the role each plays in effectively regulating the sector. The basic policy for the regulated sector must be formally established in law by action of the legislative or executive branch, or both, and must be made prospectively mandatory for the regulatory agency.
<b><i>Participation</i></b>	A good regulatory regime is one in which all stakeholders are able to contribute to the development and effectiveness of the regime. This includes stakeholders such as local communities, local and provincial government, investors and consumers. It refers to effective participation in the regulatory process and decisions through a set of best practices such as public hearings and consultations, the possibility of using contradictory processes, an advisory board, among others.
<b><i>Accountability</i></b>	Regulators need to be held accountable for their actions. Accountability serves to constrain the extent to which regulators and the regulated are able to deviate from the regime's core principles. It is a mechanism to control abuse of office. It also ensures that resources are used properly.
<b><i>Predictability</i></b>	The regulatory system must provide reasonable, though not absolute, certainty as to the principles and rules that will be followed within the overall regulatory framework. Regulatory regimes must be stable and predictable. When regulatory procedures are changed, the change process must be clear. Multinational corporations that have long-term investments with high sunk costs in emerging markets need to be confident that the current regulatory regime will not pose a threat to investment profitability at some point in the future.

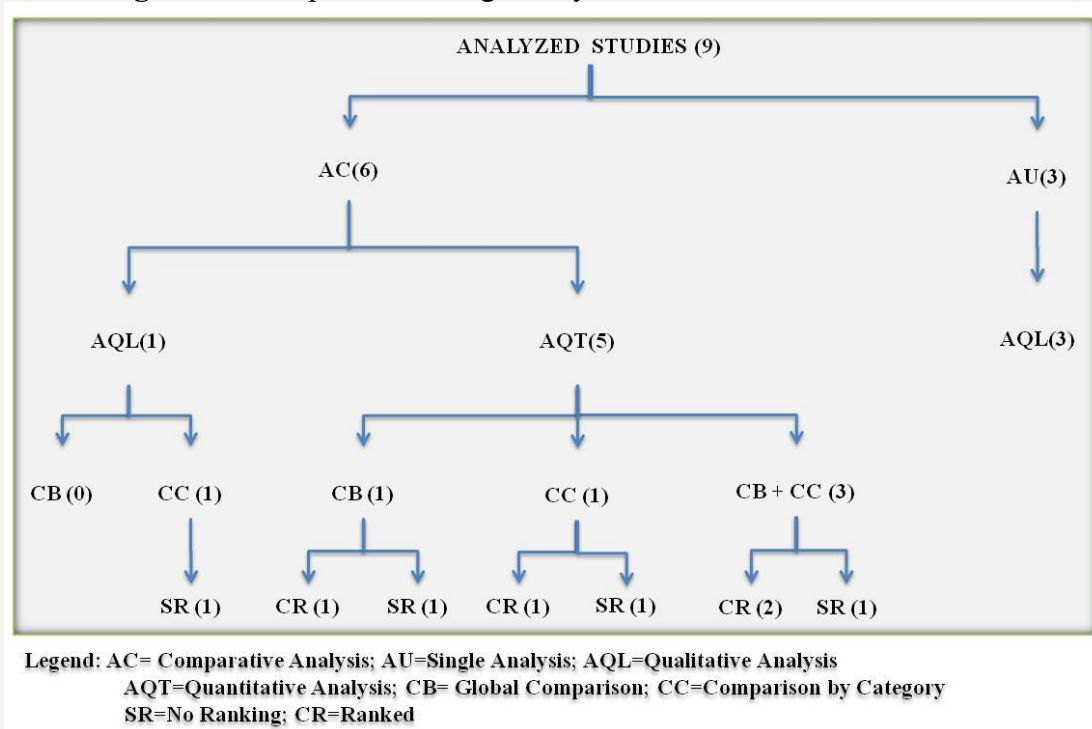
Source: Authors (2020)

When comparing the regulatory governance assessment methods used in the analyzed studies, based on those that opted for the comparative analysis criterion (studies that used more than one regulatory agent in the regulatory governance analysis), that is, six studies, as they represent 67 % of the total, it can be seen in Figure 1, that five (83%) chose to use *quantitative analysis* (used statistical resources, translating the data found into numbers or letters, in order to quantify and classify them), therefore being the largest part. Among these, three (60%) performed both the *comparison by category* (studies that compared the analysis categories of each regulatory agent, one by one) and the *global*

<sup>5</sup>Financial independence can be considered as a type of autonomy. However, following the literature and to give greater prominence to this issue, it was decided to consider it a specific criterion.

*comparison* (studies that analyzed the data comparing all analysis categories in a grouped manner of each regulatory agent surveyed), and two (67%) chose to rank (studies that attributed a score to the analysis categories, establishing a rating scale for the surveyed regulatory agents).

**Figure 1 - Comparison of Regulatory Governance Assessment Methods**



### 3.2. Selection and Definition of the Regulatory Governance Assessment Methodology

From the comparisons of the categories of analysis and evaluation methods of the articles analyzed in item 3.1, it was decided to use as the main reference the methodology adopted in Study 5, by Marques and Pinto (2018). This choice is justified because this study was the only one that applied the seven categories of regulatory governance analysis most used among the researched studies and for having used comparative analysis as a method of regulatory governance assessment, the method selected for this study. In addition, the methodology used in Study 5 is considered by the authors to be easy to use, flexible and adaptable, in addition to being convenient and useful for comparing and measuring regulatory governance policies in countries or regions (MARQUES and PINTO, 2018). Considering that this research proposes to compare only two regulatory bodies and that the sector of analysis refers to the safety of consumer products, being, therefore, different from those researched in the reference study, in which four Portuguese

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regulators of the energy sectors were analyzed. , water and waste, telecommunications and transport, some adaptations were made to the applied methodology.

The present study proposed to use the Regulatory Governance Scorecard method (RG Scorecard), following the steps below: (1) definition of the objectives of each regulatory governance evaluation criteria; (2) definition of performance descriptors for each criterion; (3) definition of scores for the descriptors, aggregation metrics for each criterion, as well as a metric for calculating a global index. Table 4 presents the criteria, objectives and performance descriptors used in this research.

**Table 04: Regulatory Governance Scorecard**

Criteria	Objectives	Performance Descriptors
<i>Transparency</i>	Analyze the availability of documents and information used in the regulatory process.	(1) Does the regulator make available to the external public documents and data that support regulatory decision-making? (2) Does the regulator make publicly available the criteria and procedures that govern the regulatory process?
<i>Predictability</i>	Check the stability and predictability of the regulatory system regarding the principles and rules followed.	(1) Are there clear criteria and procedures governing the regulatory process? (2) Do changes to regulations occur only after extensive public notice and stakeholder consultation? (3) When changes in regulations are implemented, are they required to take place gradually? (4) Is there a regulatory agenda defining the topics that will be analyzed by the regulator?
<i>"Clarity of Rules"</i>	Check the responsibilities assigned to the regulatory entity and whether there is clarity on the role each one plays in the regulation of the sector (government and regulator).	(1) Is there a clear definition of regulatory objectives in primary law? (2) In primary law is there a clear distinction between policy and regulation?
<i>Autonomy</i>	Verify the regulatory authority's decision-making capacity based on its relationship with the government.	(1) Is the regulator a separate entity from the central government? (2) Are there any impediments for regulatory acts to be reviewed by a higher hierarchical body? (3) Do top officers have a fixed term of office?
<i>Financial Independence</i>	Identify how the regulator is financed and analyze the regulator's ability to determine its expenses and manage its resources.	(1) Does the regulator's budget come from its own revenue? (2) Does the regulator's budget depend on the approval of a higher level? (3) Are the revenues sufficient for the exercise of its activities?
<i>Accountability</i>	Analyze the regulatory authority's control mechanisms.	(1) Is there a right of appeal for parties who believe their interests are harmed by decisions of regulators that were taken against the requirements of law? (2) Are there reporting and auditing obligations at the regulatory authority? (3) Is there oversight or performance reviews through assessments or hearings? (4) Are there ethical and procedural obligations?
<i>Participation</i>	Check for effective stakeholder participation in the regulatory process and decision-making.	(1) Are there formal consultation processes such as public hearings? (2) Are consultations carried out throughout the regulatory process, rather than just at the end? (3) Are the contributions received, such as YES as the regulator's manifestations, made available to the public? (4) After the regulator has made public its responses to the contributions received, do interested parties have an opportunity to provide further comment? (5) Is there an advisory board with stakeholder representation?

**Source:** Authors (2020), based on Marques e Pinto (2018)

To score each performance descriptor and aggregate the regulatory governance assessment criteria, according to step (3), the metric represented in Equation 1 was used.

Equation 1

$$\frac{\sum_{i=1}^n v_i}{N_{\text{descriptors}}} \quad \begin{array}{l} v_i = 1, \text{ if yes} \\ v_i = 0, \text{ if no} \end{array}$$

Where:

$v_i \rightarrow$  *Score of each performance descriptor*

$N \rightarrow$  *Number of descriptors*

Every performance descriptor that got the answer “yes” received the value “1”. The descriptor for which the answer was “no” was assigned the value “0”. After this analysis, the formula presented in Equation 1 was applied to each of the regulatory governance assessment criteria, which allowed the normalization of the results into a single scoring scale, ranging from 0 to 1. Subsequently, the metric presented in the Equation 2, aiming to find a global index to assess the level of regulatory governance of each regulator analyzed. For the final value found, “0” was considered the worst result and “1” the best result.

Equation 2

$$\frac{\sum_{i=1}^n c_i}{N_{\text{criteria}}} \quad \begin{array}{l} \text{Where:} \\ c_i \rightarrow \text{Scoring of each evaluation criterion;} \\ N \rightarrow \text{Number of criteria} \end{array}$$

#### 4. Analysis of Results

This fourth part of the article is dedicated to the analysis and discussion of the results of the application of the regulatory governance assessment methodology, defined in item 3.2, for the surveyed regulatory agents, namely, Inmetro and ACCC. The assessment of Inmetro's regulatory governance was carried out through the analysis of normative acts (laws, decrees, resolutions and ordinances), internal documents of the Quality Management System, as well as information obtained from the Institute's website. The assessment of ACCC's regulatory governance took place through the analysis of documents similar to those used for the assessment of Inmetro, but with the need to complement the information obtained, through a structured interview with those responsible for the institution's regulatory area.

The regulatory governance assessment criteria were analyzed individually through performance descriptors, with the identification of whether or not each of them was met. For the descriptors considered as attended, the answer “yes” was attributed and



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for those considered not attended, the answer “no” was attributed. For "yes" answers, the value "1" was assigned and for "no" answers, the value "0". Subsequently, Equation 1 was applied, obtaining the score for each criterion.

Table 5 shows the results found in the evaluations. A detailed analysis of each of the performance descriptors is found in Fortes (2020). According to these results, with regard to Inmetro, it appears that the transparency and accountability criteria were the ones that obtained the best score, that is, “1”. The autonomy, participation and predictability criteria were in an intermediate position, reaching respectively the scores “0.67”, “0.60” and “0.50”. The other criteria, namely, clarity of rules and financial independence, obtained the worst score, that is, “0”.

As for the ACCC, there are better results. The financial independence criterion was the one that received the lowest score, that is, “0.33”. The other criteria analyzed, namely, transparency, predictability, clarity of rules, autonomy, accountability and participation, reached the maximum score, that is, “1”.

**Table 05: Inmetro and ACCC Regulatory Governance Assessment**

CRITERIA	PERFORMANCE DESCRIPTORS	INMETRO			ACCC		
		Answers	Score Descriptors	Criteria Score	Answers	Score Descriptors	Criteria Score
Transparency	(1) Does the regulator make available to the external public documents and data that support regulatory decision-making?	YES	1	1,00	YES	1	1,00
	(2) Does the regulator make publicly available the criteria and procedures that govern the regulatory process?	YES	1		YES	1	
Predictability	(1) Are there clear criteria and procedures governing the regulatory process?	YES	1	0,50	YES	1	1,00
	(2) Do changes to regulations occur only after extensive public notice and stakeholder consultation?	YES	1		YES	1	
	(3) When changes in regulations are implemented, are they required to take place gradually?	NO	0		YES	1	
	(4) Is there a regulatory agenda defining the topics that will be analyzed by the regulator? *	NO	0		YES	1	
"Clarity of Rules"	(1) Is there a clear definition of regulatory objectives in primary law?	NO	0	0,00	YES	1	1,00
	(2) In primary law is there a clear distinction between policy and regulation?	NO	0		YES	1	
Autonomy	(1) Is the regulator a separate entity from the central government?	YES	1	0,67	YES	1	1,00
	(2) Are there any impediments for regulatory acts to be reviewed by a higher hierarchical body?	YES	1		YES	1	
	(3) Do top officers have a fixed term of office?	NO	0		YES	1	
Financial Independence	(1) Does the regulator's budget come from its own revenue?	NO	0	0,00	NO	0	0,33
	(2) Does the regulator's budget depend on the approval of a higher level?	NO	0		NO	0	
	(3) Are the revenues sufficient for the exercise of its activities?	NO	0		YES	1	
Accountability	(1) Is there a right of appeal for parties who believe their interests are harmed by decisions of regulators that were taken against the requirements of law?	YES	1	1,00	YES	1	1,00
	(2) Are there reporting and auditing obligations at the regulatory authority?	YES	1		YES	1	
	(3) Is there oversight or performance reviews through assessments or hearings?	YES	1		YES	1	
	(4) Are there ethical and procedural obligations?	YES	1		YES	1	
Participation	(1) Are there formal consultation processes such as public hearings?	YES	1	0,60	YES	1	1,00
	(2) Are consultations carried out throughout the regulatory process, rather than just at the end?	YES	1		YES	1	
	(3) Are the contributions received, such as YES as the regulator's manifestations, made available to the public?	NO	0		YES	1	
	(4) After the regulator has made public its responses to the contributions received, do interested parties have an opportunity to provide further comment?	YES	1		YES	1	
	(5) Is there an advisory board with stakeholder representation?	NO	0		YES	1	

Source: Authors (2020)

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\* During the survey period, Inmetro had suspended the publication of the Regulatory Agenda for consumer products, as it was implementing a new regulatory model, which is why it was considered that the Institute did not meet the fourth performance descriptor.

To calculate the global index of each of the evaluated regulators, Equation 2 was used, that is, the sum of the scores found in the regulatory governance evaluation criteria was performed and the result was divided by the total number of criteria, considering "0" the worst result and "1" the best result. As shown in Table 6, Inmetro obtained an overall index of 0.54, while ACCC achieved an overall index of 0.90, confirming the hypothesis that ACCC can be used as a reference for Inmetro regarding regulatory governance in consumer product safety regulation.

**Table 06: Global Index: Inmetro and ACCC**

Criteria	Criteria Score	
	INMETRO	ACCC
<i>Transparency</i>	1,00	1,00
<i>Predictability</i>	0,50	1,00
<i>Clarity of Rules</i>	0,00	1,00
<i>Autonomy</i>	0,67	1,00
<i>Financial Independence</i>	0,00	0,33
<i>Accountability</i>	1,00	1,00
<i>Participation</i>	0,60	1,00
<b>Global Index</b>	<b>0,54</b>	<b>0,90</b>

Source: Authors (2020)

Performing a comparative analysis of the results, it can be inferred that the criteria that need to be worked out the most by Inmetro are clarity of rules and financial independence, the latter also representing a point of improvement for ACCC. For the predictability, autonomy and participation criteria, Inmetro scored above 50%, indicating that improvements can be implemented, but that the Institution is already showing good results. For these criteria, ACCC achieved the maximum score, which could serve as an example for Inmetro. As for the transparency and accountability criteria, Inmetro achieved the maximum score, equaling the ACCC.

From the results found, it was possible to list some actions that can contribute to expanding Inmetro's regulatory governance:

1. Establish a scale for implementing changes in regulations, which will provide greater stability and predictability to the regulatory system.
2. Resume the practice of establishing a regulatory agenda for consumer products and complying with it, in order to increase the predictability of the regulatory system.

3. Establish a clearer definition of Inmetro's regulatory objectives in primary law. This tends to reduce interpretation doubts and provide better clarity as to the objectives to be pursued in carrying out regulatory activities.
4. Establish a better distinction between the role of Conmetro<sup>6</sup> and Inmetro in Law 9,933 of December 20, 1999, in order to provide greater clarity between the functions to be performed by each entity (government and regulator).
5. Establish a law that defines a fixed term for Inmetro directors, since, according to Stern and Holder (1999), the more senior officials are protected against unfair dismissals by politicians, the greater the autonomy of the regulator, which you will have more freedom to perform your duties and achieve your stated goals.
6. Establish a more specific, safe and adequate source of financing for Inmetro, so that the Institute can determine its expenses and manage its resources independently.
7. Expand the dissemination of information generated during the public consultation process, thus increasing publicity and participation by the general public.
8. Create consultative councils, aiming to obtain a more democratic and participative regulatory system.

## **5. Final Considerations**

This research was developed in order to verify to what extent the regulatory governance exercised by the National Institute of Metrology, Quality and Technology (Inmetro) is adequate for the fulfillment of its objectives, regarding the regulation of consumer product safety. The study evaluated the regulatory governance of Inmetro and the Australian Competition and Consumer Commission (ACCC), also performing a comparative analysis of the results found for the two regulatory agents.

In the literature review, it is found that the themes of consumer product safety, regulation and regulatory governance have not crossed, reinforcing the relevance and novelty of this research, as it contributes to filling the gap in the literature regarding the

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<sup>6</sup> Interministerial collegiate body composed of 11 ministers of state, the president of Inmetro and 4 presidents of private institutions, representing, therefore, the political side.

absence of studies that analyze the regulatory governance of consumer product safety regulatory systems.

In the survey results, an overall index of 0.54 for Inmetro and 0.90 for ACCC was found. Among the criteria that most explain this difference are clarity of rules, predictability and participation. Clarity of rules refers to the clear definition of regulatory objectives and the distinction between policy and regulation. Therefore, the improvement in this criterion goes through changes in the primary laws that govern Inmetro, notably Laws No. 5,966, of 1973, No. 9,933 of 1999 and No. 12,545, of 2011.

Regarding predictability, the interruption in the regulatory agenda in 2019 due to the implementation of Inmetro's New Regulatory Model stands out. As the elaboration of the agenda is an activity already incorporated in the regulatory process of the Institute, its resumption will bring about an improvement in this aspect. Finally, in terms of participation, it is possible to improve Inmetro's regulatory governance through measures such as the publication of statements received during the public consultation on the Institute's website and the creation of an advisory council with members representing interested parties.

Some limitations of this study are noteworthy and constitute a future research agenda. The first is the assessment of regulatory substance, the second component of the regulatory system in the definition of Levy and Spiller (1994). Another point for future investigation is the inclusion of other governance criteria, such as: proportionality, integrity and appropriate institutional characteristics.

As this research is unprecedented in the assessment of regulatory governance for the regulation of consumer products, some adaptations to the reference methodology were necessary, for example, in the definition of the performance descriptors of some criteria. It is important that other works explore new methods and descriptors for evaluating the regulatory governance of consumer product regulation, alternative to those used in this research, in order to validate them.

Finally, it is noted that, despite the results of this research already point to concrete practical paths, the gap in studies on the subject limits the debate on how regulatory governance applied to the regulation of consumer product safety should be constituted, in order to increase the result of this type of regulation. It is essential, therefore, that literature devotes itself more closely to this matter.

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