

EVALUATING THE QUALITY OF REGULATORY IMPACT ANALYSIS: A LITERATURE REVIEW

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Regulatory Impact Analysis (RIA) is an instrument that can provide information and knowledge to decision makers to assess whether a given regulation is capable of achieving its objectives, with acceptable impacts and reasonable costs. For RIA to be useful and guide good decisions, it is not enough that it is carried out; it needs to be of quality. This research aimed to understand the current stage of the literature on RIA quality evaluation and offer practical and theoretical contributions, as well as an agenda for future studies. Through literature review, 26 empirical articles were identified and examined. A decreasing pace of publications and the use of various dimensions and methods for evaluating the quality of RIA were identified. It was found that the RIAs performed in the last 40 years have shown important weaknesses and inconsistencies that can compromise their use. In order to advance the knowledge on the topic, new studies that evaluate the quality of the RIA in different countries and regions, with a critical approach to the methods used, and that identify political and institutional factors related to analyses of higher or lower quality were suggested.

Keywords: regulatory impact analysis; regulatory impact assessment; RIA; regulation; quality.



AVALIANDO A QUALIDADE DA ANÁLISE DE IMPACTO REGULATÓRIO: UMA REVISÃO DA LITERATURA

A Análise de Impacto Regulatório – AIR é um instrumento que pode oferecer informações e conhecimento aos tomadores de decisão para que avaliem se determinada regulação é capaz de alcançar seus objetivos, com impactos aceitáveis e custos razoáveis. Para que a AIR seja útil e oriente boas decisões, não basta que seja realizada, ela precisa ter qualidade. O objetivo da presente pesquisa foi compreender o estágio atual da literatura sobre avaliação da qualidade da AIR e oferecer contribuições práticas e teóricas, bem como uma agenda para estudos futuros. Por meio de revisão da literatura, foram identificados e examinados 26 artigos empíricos. Identificou-se um ritmo decrescente de publicações e o uso de variadas dimensões e métodos de avaliação da qualidade da AIR. Verificou-se que as AIRs realizadas nos últimos 40 anos têm apresentado fragilidades e inconsistências importantes que podem comprometer o seu uso. Para que se avance no conhecimento sobre o tema, sugeriu-se novos estudos que avaliem a qualidade da AIR em diferentes países e regiões, com abordagem crítica aos métodos utilizados e que identifiquem fatores políticos e institucionais relacionados a análises de maior ou menor qualidade.

Palavras-chave: análise de impacto regulatório; AIR; regulação; qualidade.

EVALUACIÓN DE LA CALIDAD DEL ANÁLISIS DE IMPACTO REGULATORIO: UNA REVISIÓN DE LA LITERATURA

Análisis de Impacto Regulatorio - AIR es un instrumento que puede proporcionar información y conocimiento a los tomadores de decisiones para evaluar si una regulación dada es capaz de lograr sus objetivos, con impactos aceptables y costos razonables. Para que AIR sea útil y oriente las buenas decisiones, no basta con que se lleve a cabo, necesita tener calidad. El objetivo de esta investigación fue conocer el estado actual de la literatura sobre evaluación de la calidad del AIR y ofrecer aportes prácticos y teóricos, así como una agenda para futuros estudios. Mediante revisión de la literatura, se identificaron y examinaron 26 estudios empíricos. Se identificó un ritmo decreciente de publicaciones y varias dimensiones y métodos para evaluar la calidad del AIR. Se encontró que los AIR realizados en los últimos 40 años han mostrado importantes debilidades e inconsistencias que pueden comprometer su uso. Con el fin de avanzar en el conocimiento sobre el tema, se sugirieron nuevos estudios que evalúen la calidad del AIR en diferentes países y regiones, con un enfoque crítico de los métodos utilizados y que identifiquen factores políticos e institucionales relacionados con análisis de mayor o menor calidad.

Palabras clave: análisis de impacto regulatorio; AIR; regulación; calidad.

1 INTRODUCTION

In a broad sense, regulation covers a variety of rules established by the government that affect companies and individuals (Hahn & Tetlock, 2008). The government, in general, uses regulation to intervene in market failures and promote the values established by society (Belfield et al., 2018). People expect regulation to protect them from fraud, prevent accidents, preserve the environment, promote the health of the population, and offer security to the trade of goods and services (Ellig, 2018; Hahn et al., 2000).

However, it is known that regulation can generate unwanted effects. In regulated markets, goods and services can become more expensive, workers can have their wages reduced, and the population can lose freedom and privacy. To avoid unwanted and unnecessary effects, the decision maker must invest in obtaining knowledge and information before deciding. It is recommended that the decision maker does not make decisions before knowing whether the regulation will face real problems with acceptable impacts and reasonable costs (Ellig, 2018). The Regulatory Impact Analysis (RIA) is an instrument that can offer this type of aid to the decision maker and increase the chances of success of regulatory policies (Humpherson, 2004).

For RIA to reach its goals, it needs to be of quality to guide good decisions (Fritsch et al., 2013). Regarding this aspect, studies identified low quality in some RIAs (Belcore & Ellig, 2008; Belfield et al., 2018; Hahn & Tetlock, 2008) and the lack of an adequate analysis standard (Ellig & Fike, 2016; Ellig & Mclaughlin, 2012). Other studies suggest further investigations on the quality of RIA so that improvement strategies can be identified (De Francesco, 2012; Ellig et al., 2013; Rissi & Sager, 2013).

This research seeks to contribute to this discussion, aims to understand the current stage of the literature on RIA quality evaluation, and offers practical and theoretical contributions, as well as an agenda for future studies.

2 REGULATORY IMPACT ANALYSIS (RIA)

The term RIA was created in the United States, in the 1970s, to represent the analysis and measurement of the effects of regulatory proposals. At the time, Presidents Nixon, Ford, and Carter, who governed the United States between 1969 and 1981, had already presented guidelines for improving regulation, but the institutionalization of RIA occurred in the 1980s, when the Reagan administration demanded Cost-Benefit Analysis

(CBA) for all regulations with an impact greater than US\$100 million (Ellig & McLaughlin, 2012; Goodstein, 1995; Vibert, 2006).

When proposed in the United States, the concept of RIA had a strong relationship with CBA. There was strong concern with demonstrating that the benefits outweighed the costs of regulatory proposals (Zentner, 1984). The use of RIA was aimed at promoting the maximization of net benefits among the evaluated regulatory alternatives, to obtain greater economic efficiency and impose less discretion on the decision maker (Goodstein, 1995). RIA was confused with CBA as it was conceptualized as employing “cost-benefit criteria in developing and issuing regulations” (Zentner, 1984, p.167).

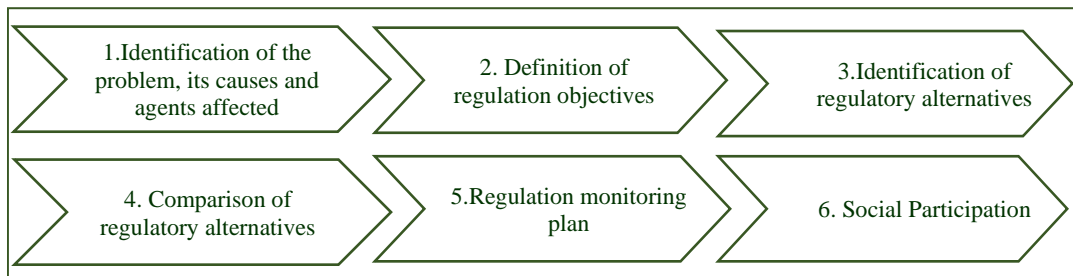
As adherence to RIA grew in developed and developing countries (Adelle et al., 2016; Reyes et al., 2015), its application and concepts underwent important changes (Radaelli, 2010). Criticism of the exclusive use of CBA has been gaining ground in recent literature due to the low development of quantification methods (Achtnicht et al., 2009; Belfield et al., 2018; Kirkpatrick et al., 2004), the difficulty and immorality of attributing values to human life and the environment (Robinson & Levy, 2011; Zentner, 1984), and the need to incorporate additional issues such as distribution, fairness, and equity in analyses (Nweke, 2011). On the other hand, as RIA incorporates new methods and moves away from the practical application of CBA, a methodological gap in RIA also emerges (Lussis, 2004). Some analyses may be conducted in a way that only justifies predetermined regulatory choices (Radchenko & Parshina, 2014).

Thus, in studies and guidelines on RIA, there has been an incorporation of methods that consider qualitative and quantitative perspectives and other fundamental issues (Hansson & Nerhagen, 2019; Jacobs, 2004). The RIA, as a process in which problems and their causes are defined (Dudley et al., 2017; Jacobs, 2004; Mota et al., 2020), regulatory alternatives are compared (Ellig & Fike, 2016), and broad social participation is promoted (Radaelli, 2010) gains strength in literature.

RIA is an administrative requirement to examine proposed regulation by performing a series of steps, including problem definition, the analysis of the status quo, the definition of feasible options, the choice of decision-making criteria, open consultation with a wide range of stakeholders, the analysis of how different stakeholders, the environment and public administration are going to be affected by proposed rules, and, in some countries at least, a recommendation for the adoption of a specific regulatory or non-regulatory option. (Radaelli, 2010, p.168)

In this sense, more recent works portray the RIA as a systematic process that involves steps that can be represented in Figure 1.

Figure 1 – RIA Steps



Source: elaborated by the authors, from Adelle and Jordan (2014), Jarrar (2018), and Radaelli (2010).

The step of identifying the problem is crucial in the regulatory process, since the low quality of regulation, in many situations, comes from an incorrect understanding of the problem (Jacobs, 2004). In this step, the causes of the problem must be explained, as well as which agents are affected by it and to what extent they are affected. In addition, the need for government action, the market failures involved, and the reasons that prevent the market from achieving efficient results must be presented (Bailey et al., 2002; Dudley et al., 2017; Nweke, 2011).

In the second step, the objectives of regulatory action must be defined in response to the identified problem. Objectives must be measurable, verifiable, and must reflect society's needs and values (Bailey et al., 2002; Ballantine & Devonald, 2006). Clear definitions of objectives are essential for monitoring the results of regulation (Jarrar, 2018).

In the step of identifying regulatory alternatives, possible ways to deal with the problem must be raised. Different alternatives, comparable and related to various regulatory instruments, must be considered. The regulator must look for friendlier alternatives in addition to the traditional “command and control.” The “doing nothing” alternative must always be considered (Dudley et al., 2017; Radaelli, 2005).

When comparing regulatory alternatives, a wide range of methods must be considered, from a simple analysis to a complete cost-benefit analysis, with the possibility of integrating qualitative and quantitative methods. In this step, the costs (disadvantages) and benefits (advantages) of each alternative are compared to guide the decision maker (Jacobs, 2004; Radaelli, 2004b). The method of comparison must be flexible and comply with the principle of proportionality, so as not to require robust analyses when the

magnitude of the problem is less important (Letens et al., 2008).

The fifth step, which concerns the regulation monitoring plan, refers to the broad description of the procedures necessary for monitoring and evaluating the effectiveness and efficacy of the chosen regulatory alternative (Daskal et al., 2019; Staroňová, 2016). Through indicators properly developed in the RIA, it is expected to evaluate the effects of regulation and guide the decision regarding its maintenance or future revision (Radaelli, 2005).

Described as the last step, the participation of society can occur at any time during the RIA, through processes of consultation with society (Jacobs, 2004). Participation will promote listening channels for a plurality of voices and will give legitimacy to the analysis (Radaelli, 2005; Saab et al., 2018). It is recommended that society produce information, criticism, and generate evidence within the scope of the RIA (Ballantine & Devonald, 2006).

Having presented the concepts and main steps of the RIA, it is worth noting that, for it to fulfill its purpose, the analysis needs to be done well. It is not enough to conduct the process and the steps indicated; it is essential that the RIA has quality so that it can, in fact, recommend good decisions and promote improvements in regulation ((Fritsch et al., 2013).

3 METHOD

The aim of this research is to understand the current stage of the literature on RIA quality evaluation and offer practical, theoretical contributions and an agenda for future studies. To achieve this objective, a literature review was carried out based on empirical research published in scientific journals indexed in the Web of Science and Scopus databases, up until April 2021. The searches were performed using the terms “regulatory impact assessment,” “regulatory impact analysis,” and “quality.”

Initially, a list of 23 articles was generated, with the search terms in the title, keywords, or abstract. In order to ensure that important studies related to the topic were not disregarded in the review, the "snowball" technique was used (Vinuto, 2014): texts frequently cited on the same topic that were not included in the initial list were identified. Using the technique, 15 articles were included in the list, which totaled 38 articles. These articles were examined, and it was identified that 26 of them dealt with empirical investigations on RIA quality evaluation, the scope of this research.

The examination of the 26 articles was made from three categories: i) contextual characteristics; ii) RIA quality evaluation; and iii) main findings about the quality of RIA. In the category of contextual characteristics, the locus of performance of the evaluated experiences, the period of publications, and other issues were presented. The second category presented analysis dimensions and the concepts, advantages, and disadvantages of using the different methods to evaluate the quality of RIA. In the third and last category, the main findings about the quality of RIA found in the empirical experiences examined were indicated.

4 RESULTS

4.1 Contextual characteristics

The first experiences of RIA in the world took place in mid-1981, when the government of the United States (USA) started to require this type of analysis for federal regulations (Hahn & Dudley, 2004). Ten years later, in 1991, the first RIA quality evaluation study was published. Researcher Arthur Fraas published the article “The Role of Economic Analysis in Shaping Environmental Policy,” in which he evaluates the quality of impact analysis and describes the role it played in the formulation of environmental regulations in the USA. Since then, 26 empirical research papers on RIA quality evaluation have been published (Table 1).

Table 1 – Literature on RIA Quality Evaluation

n	Study	Number of RIAs evaluated	Period of RIAs	Locus	Method used
1	Fraas (1991)	2	1981-1990	USA	Case Study
2	Hahn et al (2000)	48	1996-1999	USA	Checklist
3	Harrington et al (2000)	28	1972-1999	USA	Retrospective Comparison
4	Posner (2003)	4	2000-2003	USA	Case Study
5	Humpherson (2004)	10	2001-2002	United Kingdom	Case Study
6	Hahn and Dudley (2004)	74	1982-1999	USA	Checklist
7	Opoku and Jordan (2004)	41	2003-2004	Europe	Point Scale
8	Lussis (2004)	13	2004	Europe	Checklist
9	Harrington (2006)	61	1995-2004	USA	Retrospective Comparison
10	Renda (2006)	70	2003-2005	Europe	Checklist
11	Cecot et al (2007)	94	2003-2005	USA and Europe	Checklist
12	Belcore and Ellig (2008)	13	2003-2007	USA	Point Scale
13	Russel and Turpenney (2009)	7	2004-2007	United Kingdom	Case Study
14	Staroňová (2009)	126	2007	Slovakia	Checklist
15	Staroňová (2010)	577	2007-2008	5 countries	Checklist
16	Frass and Lutter (2011)	13	2005-2009	USA	Checklist
17	Ellig and Mclaughlin (2012)	45	2008	USA	Point Scale
18	Shapiro and Morral (2012)	100	2000-2009	USA	Point Scale
19	Fritsch et al (2013)	773	2005-2010	Europe and United Kingdom	Checklist
20	Ellig et al (2013)	111	2008-2010	USA	Point Scale
21	Radchenko and Parshina (2014)	112	2013	Russia	Checklist
22	Ellig and Conover (2014)	13	2008-2010	USA	Point Scale
23	Ellig and Fike (2016)	71	2008-2010	USA	Point Scale
24	Staronová (2016)	668	2007-2013	Slovakia	Checklist
25	Belfield et al (2018)	28	2006-2015	USA	Checklist
26	Ellig and Horney (2019)	130	2008-2013	USA	Point Scale

Source: elaborated by the authors.

After the first publication, which took place in 1991, there was a hiatus of publications on the subject, with research on the subject returning only in 2000. Since then, empirical publications on RIA quality have been occurring without interruption, but with a slight deceleration in recent years (Table 2).

Table 2 – Evolution of Publications

Period	Number of Publications	%
1990-1995	1	3,8%
1996-2000	2	7,7%
2001-2005	5	19,2%
2006-2010	7	26,9%
2011-2015	7	26,9%
2016-2020	4	15,4%
Total	26	100,0%

Source: elaborated by the authors.

When analyzing the locus of the investigations carried out, the results show that the pace of publications, in addition to being slow, is concentrated in certain countries and regions. In 15 of the 26 articles examined (57.7%), experiences of RIAs from the USA were evaluated. If the country was the first to adopt this type of analysis, it also comprises more than half of the efforts of research that evaluate its quality. In addition to the studies in the United States, there were 3 RIA evaluations performed in European Union (11.5%), 2 evaluations in the United Kingdom (7.7%), 2 in Slovakia (7.7%), and 1 in Russia (3.8%). The other 3 studies (11.5%) deal with analyses of experiences in different countries, which include the Czech Republic, Estonia, Hungary, and Slovenia.

This contextual result alerts to the fact that, although the use of RIA is already implemented in most developed countries (De Francesco, 2012) and is already making progress in dozens of developing countries (Kirkpatrick et al., 2004), RIA quality evaluation has not yet reached the majority of countries in the world that adopt it in their decision-making process. In Latin America, for example, the Organization for Economic Cooperation and Development – OECD (2019) identified that RIA is being practiced in 7 countries - Mexico, Brazil, Chile, Colombia, Costa Rica, Ecuador, and Peru - but there are no publications of studies about the quality of RIAs produced in this region. Brazil,

a country that started the institutionalization and practice of RIA in mid-2007 (Castro, 2014; Peci & Sobral, 2011) and made its use mandatory in 2021 (Meneguim & Saab, 2020), also did not have the quality of RIAs evaluated in studies yet.

An increase in the volume of publications was expected, due to the growth in the number of countries that adopted RIA in recent decades (Daskal et al., 2019; De Francesco, 2012). The slowdown in the number of investigations on the quality of RIA can be explained by two reasons: i) the low interest in investigating the quality of the RIA; and ii) the imperfection and imprecision of the methods available to evaluate its quality. Previous studies show that, in many cases, RIA is adopted without a real institutional commitment (Carroll, 2010). Its use is only intended to achieve international legitimacy (Staroňová et al., 2007). In this case, there would be no incentives to explore the potential of RIA and its quality. In addition, the methods that have been used to evaluate the quality of RIA, although useful, have proved to be imperfect for diagnostic and improvement purposes (Belfield et al., 2018; Hahn & Dudley, 2004).

Among the methods used to evaluate the quality of RIA, the most prevalent was the checklist, used in 12 studies (46.2%). Then appears the point scale, which was used in 8 studies (30.8%). The case study was used in 4 studies (15.4%), and the retrospective comparison was used in 2 studies (7.7%). The next section advances this discussion and presents the different methods with their concepts, advantages, and usage limitations.

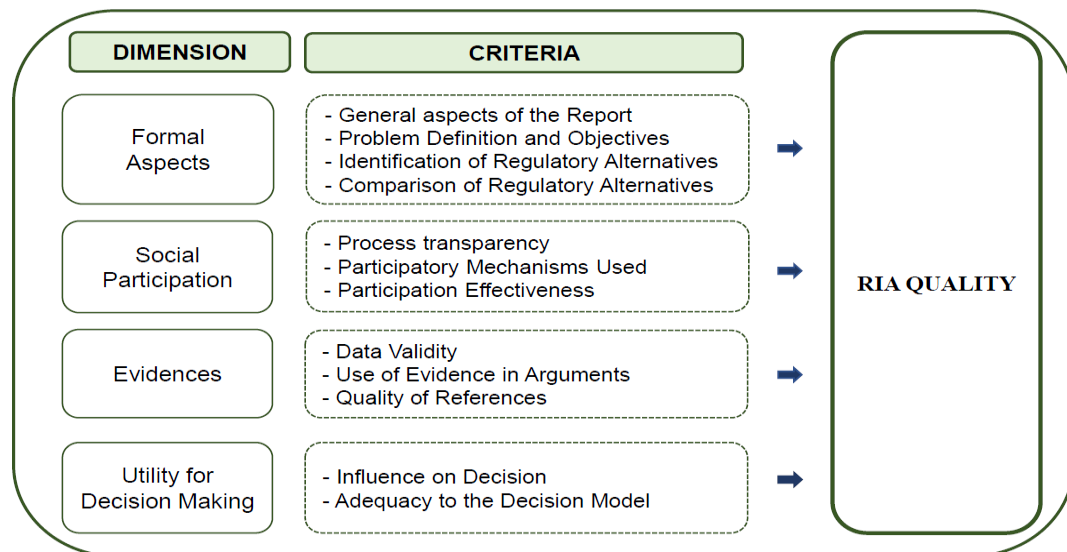
4.2 RIA Quality Evaluation

The quality of RIA is perceived from different perspectives. According to Radaelli (2004a), the various actors in society expect analysis to fulfill different roles. Specialists and academics believe that a quality RIA means efficiency and the ability to estimate impacts. Bureaucrats and public servants value analyses that follow procedures and comply with compliance rules in their development. Politicians hope that it will help with reaching consensus and improve the negotiation environment with the actors involved. The business sector perceives quality in the analysis when it indicates concerns about regulatory pressure on business costs. Citizens expect the RIA to protect them from risks and to favor the broad participation of society in the regulatory process.

Considering the variety of expectations surrounding RIA, how can we evaluate its quality? What characteristics must it have to be considered of good quality? Since 1991, when the first article that proposed to examine the quality of RIA was published,

researchers have been developing different ways to answer these questions. In general, researchers define the quality dimensions and criteria based on laws and regulations adopted in the locus of the RIA and then they apply a method to evaluate it. The main dimensions and criteria used to evaluate the quality of RIA are shown in **Figure 2**.

Figure 2 – Main Quality Dimensions and Criteria



Source: elaborated by the authors.

Once the dimensions and criteria are defined and specified, the researchers adopt a method to evaluate the quality of RIA. The current stage of the literature indicates that four methods have been used for this purpose: i) checklist; ii) point scale; iii) case study; and iv) retrospective comparison (Table 3). Next, the different methods of evaluating the quality of RIA will be discussed in more detail.

Checklist

Some studies have evaluated the quality of RIA by verifying compliance with the requirements of an impact analysis, using a simple “checklist” or “yes / no” system. The method involves analyzing the RIA report and simply checking whether or not the analysis contains items considered fundamental (Bull & Ellig, 2017).

Using the checklist is advantageous because it allows users to identify common strengths and weaknesses among many RIAs. It is a method that can be used relatively

quickly to compare large amounts of analyses (Cecot et al., 2007). It allows for the examination and diagnosis of compliance with general requirements in certain contexts (Hahn et al., 2000). Furthermore, it has the advantage of being a method easily replicable by other researchers. It does not require specific knowledge to make judgments about calculations or specific issues of the analysis (Hahn & Dudley, 2004).

On the other hand, the checklist has its disadvantages. The definition of what a good RIA is becomes somewhat imprecise. A given impact analysis may receive a high score, but its content may be of low quality (Hahn & Dudley, 2004). The checklist does not allow the identification of critical problems related to quality; there is only the verification of whether or not certain contents are present (Cecot et al., 2007).

Point Scale

In order to improve the checklist by Hahn et al. (2000), Opoku and Jordan (2004) were the first to use the point scale method to evaluate the quality of RIA. Instead of applying the checklist with a simple check of “yes” or “no,” the point scale method seeks to grade the quality of the content identified for each item. The point scale method allows the identification of how much each RIA follows the guidance and best analysis practices (Ellig et al., 2013) and offers a qualitative and quantitative perspective for the evaluation, with the aim of increasing its accuracy (Opoku & Jordan, 2004).

The point scale method consists of adopting a scale, which can range from 0 to 4 points (Opoku & Jordan, 2004), from 0 to 5 points (Belcore & Ellig, 2008), or from 0 to 6 points (Shapiro & Morrall, 2012) to represent the degree of quality observed in each item evaluated. The minimum level of the scale indicates that the item under evaluation was not even mentioned or found in the RIA. The maximum level of the scale indicates that the item was perfectly attended, without incompleteness. Intermediate levels are used to grade the quality of content observed (Belcore & Ellig, 2008; Opoku & Jordan, 2004).

Compared to the checklist, the point scale provides a more accurate evaluation of the actual quality of the RIA. In addition, the point scale encourages regulators to invest more efforts in the content developed. Regulators tend to look for better ways to conduct analysis, rather than treating RIA as a mere compliance exercise (Ellig & Mclaughlin, 2012).

On the other hand, the point scale method requires great effort from the research team. First, it requires them to read the RIA content completely and thoroughly. In

addition, it requires knowledge and specialization so that researchers are able to correctly interpret the RIA content and grade its quality with accuracy and few biases (Ellig et al., 2013).

Shapiro and Morral (2012) indicated that the use of the point scale and checklist methods provide very useful results but omit some important information. According to the authors, it is better to understand them as means to measure the degree to which the RIA provides certain types of information rather than as definitive measures of the quality of the analysis. As a consequence of this debate, the case study method is used in RIA evaluations with the expectation of obtaining clearer results related to quality.

Study Case

A common method used to evaluate the quality of RIA is the case study (Shapiro & Morrall, 2012). This method allows for an in-depth analysis of RIA elements and the differentiation between good- and bad-quality analyses, based on the understanding of consistency of arguments, key issues, assumptions, and perceptions (Cecot et al., 2007).

The case study is a qualitative research method widely used in social sciences. It is expected that a phenomenon or a social reality be investigated through this method. It starts with the observation of facts and phenomena and is followed by the discovery of the relationships between them (Silva, Godoi & Bandeira-de-Mello, 2006). According to Shapiro and Morral (2012), the case study is an excellent method for understanding the interaction of RIA quality with different factors. Individual case studies allow for the in-depth understanding of quality issues.

The use of the case study requires the selection of one or a few cases that will be investigated in depth. It is usual for the researcher to interview people involved or affected by the analysis to collect data that contribute to the identification of its quality (Russel & Turnpenny, 2009; Staroňová, 2016). Through interviews, it is possible to obtain information about the use and reliability of RIA, in addition to knowing the meanings, perceptions, and interpretations of its use as a tool for formulating regulatory policies (Fritsch et al., 2013, 2017).

The case study has the advantage of being widely accepted in social sciences and providing conditions for in-depth knowledge of RIA quality aspects, but, on the other hand, it is also a method that has disadvantages. The first is that the effort required for its realization does not allow its use in many cases. Furthermore, the results found can

be quite subjective, which means that they are hardly replicated (Cecot et al., 2007). The third disadvantage is that there is no way to generalize the results, which only apply to the investigated RIA (Shapiro & Morrall, 2012).

Any qualitative evaluation method such as checklist, point scale, or case study will be subject to criticism of subjectivity, lack of transparency, and difficulty in replication (Ellig et al., 2013). To try to get around these issues, some researchers have performed RIA quality evaluations using a quantitative approach — the retrospective comparison — presented below.

Retrospective Comparison

The main exponent of the use of retrospective comparison is the researcher Winston Harrington, who worked on the two studies that used the retrospective comparison method identified in the literature. In Harrington et al. (2000), the authors argue that little attention is paid to the accuracy of the cost information generated and made available in RIA. The authors propose that an RIA quality measure can be obtained by comparing the estimated costs before regulation (*ex-ante*) with the calculated costs after its implementation (*ex-post*). In Harrington (2006), the author includes the perspective of benefits to measure the quality of RIA, based on the comparison of costs and benefits using *ex-ante* analysis and *ex-post* analysis.

In other words, the fundamental quality parameter of RIA would be obtained from the comparison of estimated costs and benefits with those verified in the real world after the implementation of the regulation. The greater the similarity between the two measures, the greater the quality of the RIA and, therefore, the better its use in decision making (Cecot et al., 2007).

Based on the retrospective-comparison method, the low quality of an RIA would originate due to the omission or low precision of the costs and benefits used in the analysis. Omissions include cost and benefit categories that are important but not used in the analysis due to a lack of time, knowledge, or resources. Low precision would involve the occurrence of systematic errors in the calculation of the two variables (Harrington, 2006; Harrington et al., 2000).

The retrospective comparison method has important advantages and disadvantages regarding its use. The main advantage is related to the fact that the evaluation of the quality of the RIA is carried out through an economic analysis that offers good conditions for

verifying its validity and replicability. The evaluation result is objective and quantifiable. On the other hand, the method has four important disadvantages: i) it presents a perspective restricted to costs and benefits as parameters of RIA quality; ii) it can only be applied to analyses in which the CBA was used; iii) it considers the costs and benefits calculated after the implementation of the regulation as accurate, which may not be true; and iv) it requires robust ex-post studies, which are very rare (Cecot et al., 2007).

Table 3 RIA Quality Evaluation Methods

Method	Description	When to Use
Checklist	Verification of compliance with the requirements of an RIA, using “yes” or “no”	In a large number of RIAs, when it is intended to identify general aspects of quality of the analyses
Point Scale	Verification of how well each RIA follows the best analysis practices, using a point scale	In a moderate number of RIAs, when it is intended to measure the quality levels of the analyses
Case Study	In-depth investigation of RIA quality and its interaction with different factors	In few cases of RIA, when one intends to investigate the quality of the analysis in depth
Retrospective Comparison	Measurement of RIA quality based on the comparison of costs and benefits used in the ex-ante and ex-post analysis	In cases of RIA carried out with the CBA and for which ex-post data can be available for comparison

Source: elaborated by the authors.

4.3 Main Findings about RIA Quality

The literature shows that, in general, the quality of RIA developed in the last 40 years has been low and without an adequate analysis standard (Belcore & Ellig, 2008; Cecot et al., 2007; Ellig et al., 2013; Ellig & Horney, 2019; Ellig & Mclaughlin, 2012; Hahn & Dudley, 2004; Russel & Turnpenny, 2009). The use of different evaluation methods did not affect the results, which converged to the low quality of RIA in different contexts.

Studies that used the checklist method identified a low percentage of compliance with the items required in the evaluation (Cecot et al., 2007; Hahn & Dudley, 2004). Studies that used the point scale indicated that the average score of the evaluated RIAs was also low (Belcore & Ellig, 2008; Ellig & Horney, 2019; Ellig & Mclaughlin, 2012; Shapiro &

Morrall, 2012). Likewise, case studies showed important limitations and inconsistencies (Arthur Fraas, 1991; Posner, 2003; Russel & Turnpenney, 2009), and studies by retrospective comparisons showed inaccuracies in the calculation of costs and benefits (Harrington, 2006; Harrington et al., 2000). Below are the main findings on the quality of RIA in the different dimensions of analysis.

Formal Aspects

The **identification of the problem** was shown as a deficient aspect in the impact analyses that were evaluated in the literature. Belcore and Ellig (2008) evaluated 13 RIAs carried out between 2003 and 2007 in the United States and reported deficiencies in identifying market failures or systemic problems that would justify public interventions. A finding similar to that one was found by Ellig and Mclaughlin (2012) when they evaluated 45 RIAs carried out in 2008 in the same country.

In three studies carried out by Staroňová (2016, 2009, 2010), the author evaluated a total of 1,371 RIAs conducted in Slovakia, the Czech Republic, Estonia, Hungary, and Slovenia. Despite identifying differences between the countries, the author concluded that the analyses also lacked details regarding the definitions of the problems, which were described in very generic ways. In the same direction, Ellig and Conover (2014) evaluated 13 RIAs carried out in the United States from 2008 to 2010 and identified negligence with the problem identification step.

Agencies apparently are more willing to cut corners on analysis of the problem and development of alternatives than on calculation of benefits and costs of the preferred option. We suspect this occurs because some information on benefits and costs may be useful for “selling” the selected regulation, even if it is not used to design the regulation. Analysis of the underlying problem or other alternatives may actually undermine support for the regulation, so these topics get short shrift (Ellig & Conover, 2014, p.317).

The **definition of objectives** was also criticized in the three studies by Staroňová (2016, 2009, 2010). With the exception of Slovenia, which presented a good level of adequacy, the author indicated that in RIAs of Slovakia, the Czech Republic, Estonia, and Hungary, no measurable objectives were indicated. A similar result was pointed out by Fritsch et al. (2013). The authors found that, in the years between 2005

and 2010, only 22.2% of RIAs had regulatory objectives in the United Kingdom and 54.4% in the European Union.

According to Fraas (1991), failures to **identify alternatives** can be considered the most common in RIA. This finding has been confirmed by some studies. Hahn et al. (2000) found that, in 27% of 48 RIAs carried out in the United States between 1996 and 1999, the agencies failed to discuss regulatory alternatives. In RIAs studied by Posner (2003), Humpherson (2004), Belcore and Ellig (2008), and Ellig and Horney (2019), researchers also found insufficient discussion of regulatory alternatives. Often, the analysis was carried out only on the proposed regulation, with no alternatives being considered (Posner, 2003).

The results found by Russel and Turnpenny (2009) in the UK were even more worrying. According to the authors, there may have been manipulation of numbers and regulatory alternatives to achieve previously desired and predetermined policies. Staroňová (2009, 2010) came to a similar conclusion. In some European countries, the RIA was carried out after public authorities had already chosen the best regulatory alternative. In Russia, there was also no analysis of alternatives beyond the proposed regulation already defined by the government (Radchenko & Parshina, 2014).

The strong influence that ACB exerts on RIA makes the **comparison of alternatives** the focus of many evaluations of its quality. Many quality items or criteria are based on the costs and benefits used in the analysis. The results show that the conduction of this step in the last 40 years has been far from what was desired. There is a methodological gap in the comparison of regulatory alternatives (Lussis, 2004; Russel & Turnpenny, 2009).

In few RIAs, the costs and benefits of the alternatives were correctly ascertained (Hahn et al., 2000). Renda (2006) analyzed 70 RIAs carried out in Europe in the years between 2003 and 2005 and identified that, in 74.3% of cases, no real comparison was made between the costs and benefits of alternatives. The result was very close to that obtained by Staroňová (2009), which identified that there was an effort to quantify costs and benefits in only 25% of the RIAs carried out in Slovakia in 2007.

In a more recent study, Belfield et al. (2018) analyzed 28 RIAs carried out in the years between 2006 and 2015 in the United States and identified important limitations in the calculation of benefits, which were detailed in only 29% of cases. The difficulty of calculating and quantifying benefits has been recurrently verified in the literature (Arthur Fraas, 1991; Renda, 2006). When Humpherson (2004) investigated 10 UK RIAs carried out between the years 2001 and 2002, he identified that the benefits were overestimated. This bias can lead the decision maker to approve new regulations, believing in benefits

that are not verified in the real world.

Social Participation

Some important inconsistencies were found in the social participation process. When evaluating experiences in the UK, Russel and Turnpenny (2009) found that participation is poorly integrated into impact analysis and that the participants were restricted to certain groups in society. This last finding was also found by Staroňová (2009), who observed few participants outside the Slovak government, and by Radchenko and Parshina (2014), who identified the dominance of the Russian government and private companies' view in the RIA process. There was little participation from consumers and citizens.

For ordinary citizens to participate in the RIA, there must be transparency and accessibility in the process. However, empirical studies did not confirm this. In many of the analyzed experiences, public authorities failed to provide reports and data analyses. Finding RIA reports on government websites was not an easy task, and, when they were found, they were not clear enough to be understood by the average citizen (Hahn et al., 2000; Opoku & Jordan, 2004; Renda, 2006).

Evidence

The analysis of evidence is a dimension still explored very little in the evaluation of the quality of RIA. Considering that the use of evidence in RIA consists of providing information and arguments so that choices can be made by the decision-maker (Souto-Otero, 2013), the scarcity of analyses in this dimension is a worrying factor.

The research that showed advances in the analysis of this aspect was developed by Russel and Turnpenny (2009), who analyzed 7 RIAs prepared between 2004 and 2007 in the United Kingdom. The authors investigated the evidence used in the analyses and identified insufficient use of data, tools, and methods to justify the results presented. These findings confirm the understandings of Radaelli (2010) and Staroňová (2010), who alert that the use of evidence is frequently ignored and that impact analysis is often based on a mere analytical exercise.

Utility for Decision Making

Russel and Turnpenny (2009) did not find positive results when evaluating the usefulness of RIA in UK decision-making. According to the authors, there was little integration of impact analysis with decision making. RIA was often used only symbolically and was not able to change existing political structures and processes.

A similar result was found by Ellig and Mclaughlin (2012, p. 2) who warned, “the minority of the regulations contain evidence that the agency used the analysis in significant decisions”. However, these researchers found an important issue about the use of RIA in the United States. There is a high correlation between the quality of RIA and its use by decision makers, indicating that they are willing to use good analyses or that good analyses are performed when there is a propensity to use them. This finding reinforces the importance of investing in increasing the quality of RIA and raising the awareness of its use to decision makers.

5 CONCLUSION

This conclusion intends to present 3 topics: i) report the current stage of the literature on RIA quality evaluation; ii) present the theoretical and practical implications of the research; and iii) suggest an agenda for future studies that can contribute to the construction of knowledge on the subject.

This presented study showed that there is a decreasing pace of publications on RIA quality evaluation and that there is a concentration of studies in a few countries. Furthermore, the research showed that the evaluations have been carried out by using four dimensions and different methods; however, in general, the results converge to the low quality of the RIA.

It was found that the RIAs carried out in the last 40 years have shown weaknesses and inconsistencies in all their dimensions, from the formal aspects to the utility for decision making, including the social participation and the use of evidence. These inconsistencies can compromise the use of the RIA and lead to ineffective policies for addressing public problems.

From a practical point of view, this research seeks to help managers and public servants identify weaknesses in impact analyses so that they can adopt improvement measures. From a theoretical point of view, this study organized and synthesized previous studies and generated knowledge so that RIA evaluation dimensions and methods can be

used, developed, and that new reflections on RIA can be made.

To further develop the knowledge on the topic, new studies that evaluate the quality of RIA in different countries and regions are suggested, especially in Latin America. In this region, the RIA is already in practice, but there are no investigations into its quality. Furthermore, evaluation dimensions and methods must be tested, criticized, and improved. Lastly, new studies on RIA quality evaluation can help identify political and institutional factors that can lead to higher or lower quality analyses.

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