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ARTICLE

Socio-Environmental Responsibility Policy in Financial Institutions

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ABSTRACT

This research intents to analyze the influence of Socio-Environmental Responsibility Policy of Brazilian's Central Bank on financial institutions economic performance listed at the Brazilian stock exchange. The data was collected from diversified sources (websites, explanatory notes, reference form and Economatica® data base) from 2012 up to 2017. As sample, 22 financial institutions were considered for data collection and analysis. The results showed that the growth in shareholder's equity and contingent liabilities have significant differences from the adoption of the Socio-Environmental Responsibility Policy. Considering six items of corporate governance and six items of risk management, no investigated institution presented all these mechanisms requested by Brazilian's Central Bank. Brazilian's financial institutions recognized a greater volume of liabilities and expenses after the implementation of such policy, which reduced their net equity. This research shed some lights in socio-environmental policies regarding corporate governance and risk management mechanisms. **Objective**: to analyze whether the adoption of a socio-environmental responsibility policy influences the performance indicators and the corporate governance and risk management framework of financial institutions listed on the Brazilian stock exchange. **Method**: Data were collected from the period 2012 to 2017, referring to 22 Brazilian financial institutions, which provided information to operationalize the variables. **Results**: the results showed that, from the performance indicators investigated, the growth in shareholders' equity and contingent liabilities presented significant differences as of the adoption of the socio-environmental responsibility policy. Twelve items were analyzed, six of which were corporate governance and six of risk management, noting that no investigated institution presented all the mechanisms provided by the Central Bank of Brazil. **Contributions**: the evidence suggests that Brazilian financial institutions began to recognize a greater volume of liabilities and expenses after the obligation to implement the socio-environmental responsibility policy, reducing their net equity. These results may be due to the improvement of the corporate governance structure and the adequacy of the risk management process.

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1. Introduction

The responsibility for the management and preservation of the environment not imposed is proposed only to the Government, but to the whole society. It is foreseen in the Brazilian Federal Constitution, in its article 225, that it is up to the Public Power and the community to preserve and defend the environment to balance the use of resources and maintain the quality of life of present and future generations [8].

In general, socio-environmental concerns have become part of organizations daily lives, which tend to demonstrate activities that are sensitive to environmental and social aspects and to publicize actions developed to reduce their socio-environmental impact [10]. The government, even aware that many organizations already have actions of social and environmental responsibility, has created laws to curb practices that do not respect the environment.

In the financial sector, the responsibility for the preservation of sustainable attitudes is manifested by the policies of granting credit, in which it is constantly sought to ensure that the resources available to clients are applied to projects that do not tolerate social or environmental damages, of the determinations of the Equator Principles [49].

The National Monetary Council (CMN) Resolution No. 4,327/2014 created the Social and Environmental Responsibility Policy (PRSA), providing guidelines for financial institutions and other institutions authorized to operate by the Central Bank of Brazil (Bacen), constituting a historical reference on the subject [3].

The Resolution No. 4327/2014 established that all financial institutions must have a PRSA, as well as a governance structure for these issues, a socio-environmental risk management system and a plan of action for the adequate monitoring and mitigation of risks. Therefore, social and environmental responsibility policies help in a transversal way to integrate business planning and governance, leading to greater alignment with regulatory planning.

The PRSA linked to the Equator Principles (Principles for Responsible Investment - PRI; Principles for Sustainable Insurance - PSI) enhances the credibility of the financial system, without their participation no sustainability is possible. When the financial system management is flawed, history shows that systemic crises are established, as in 1929 (the Great Depression of the United States severely hit Brazil the following year) and 2008, with high social costs.

Therefore, the PRSA can serve to mitigate risks in lending, financing, investment and insurance operations. Therefore, Bacen's regulation may be useful in reducing credit, market, operational and liquidity risks, factors that are strongly associated with the economic performance of financial institutions.

The national and international literature presents several studies that relate socio-environmental responsibilities to economic performance [33]. Although some studies have shown a positive relationship between the variables, the results are not enough [26, 1, 44]. Thus, inquiries about investments in socio-environmental actions that were intended to verify the influence of actions with improvements in economic performance remain without conclusions [39].

There are arguments that investment in social and environmental actions does not influence the economic performance of companies [12]. However, [11, 28, 30, 35] showed that companies with greater social and environmental responsibility have better economic performance.

Based on the expectation generated by the Brazilian government regulations, the following research problem is proposed: Which Social and Environmental Responsibility Policy mechanisms were implemented by financial institutions and how was their adoption reflected in economic performance? The objective of the study is to analyze whether the mechanisms of the Social and Environmental Responsibility Policy required by the Central Bank of Brazil and its influence on the economic performance of financial institutions listed on the Brazilian stock exchange were adopted.

The discussion of socio-environmental policies in the financial sector gains scope and relevance when one considers the role of change in entrepreneurship and in the productive system carried out by financial institutions with the capacity to influence the whole economy. These factors are made even more relevant by the capacity to improve the corporate governance and risk management mechanisms of these financial institutions, generating greater credibility among stakeholders. This is based on the importance that socio-environmental management brings to banks in order to understand how banks can contribute to a fairer society, both in the internal environment and in the external environment.

Finally, financial institutions act directly in the financing of large business projects, some with potential and significant socio-environmental impacts. While financing is a determining factor for the realization of these projects, it is feasible to expect from the financial institutions efficient mechanisms to evaluate projects with high socio-environmental risk [40]. Therefore, in order to impute objective and joint liability to the financier of projects that cause environmental damage, discipline of the theme contributes to the clarity of the banks understanding of their

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responsibilities and duty of care in socio-environmental issues.

The rest of the article is organized into five sessions. Session two gives brief information on the principles of the equator and the social and environmental responsibility of the central bank of Brazil. Session three informs the reader about social and environmental responsibility and economic performance, especially in the aspects inherent in financial institutions. Session four describes the methodological procedures and session five the analysis and interpretation of the results. And finally, session six describes the research findings.

2. Equator Principles and The Socio-Environmental Responsibility Policy of Brazilian's Central Bank

Concern for socially correct, environmentally sustainable and economically viable conduct is increasingly present among the issues discussed in financial institutions. This is because the dissemination of information, in this type of environment, happens quickly through the most diverse media and, therefore, externalities can impact on image, reputation and corporate performance [20].

The Socio-Environmental Responsibility (RSA) of a financial institution may be linked to the actions of the internal organizational environment, regarding the way treatment is given to its employees; external actions related to incentives directed at the organization's external persons; and actions that refer to the environment, when the company increases projects that contribute to environmental preservation [12].

Financial institutions are constantly seeking alternatives to assess and control the social and environmental risks associated with investment activities, seeking to avoid misuse of resources and application to projects that are harmful to the environment. An important milestone is embodied in the "Equator Principles" discussed at a meeting held in London in October 2012 by the International Finance Corporation (IFC), the World Bank's financial arm, with the presence of four international banks (ABN Amro, Barclays, Citi and WestLB). The purpose of the "Equator Principles" is to ensure sustainability and environmental balance, as well as to establish voluntary initiatives for good environmental practice in Project Finance financing [23].

The adoption and application of the Equator Principles offer benefits to banks and society at large, mainly impacting their environmental conduct, stimulating their ability to document and manage risks related to environmental and social issues associated with the projects that banks will finance. However, the Equator Principles are not a good benchmark for assessing funding for activities critical to issues such as human rights, climate change, biodiversity and forest protection [5].

The Equator Principles have flaws in rigorous implementation requirements and procedures by the banks that adopt them. They do not require transparency and mechanisms to monitor their implementation and ensure compliance. Its application is limited to transactions that configure in Project Finance mode; This would not consider the nature and scale of the enterprise, but rather the type of financing. Finally, the Equator Principles have not prevented signatory banks from financing projects with greater social and environmental risks, reports [5].

In Brazil, adherence to the Equator Principles as a project finance control instrument is not successful, according to the information obtained from the signatory Brazilian's banks, given that their recorded values are of little significance in relation to the total loan portfolio [17]. The arguments indicate that there is a pressing need for bank policies to extend beyond the Equator Principles [5]. In this sense, awareness of Social and Environmental Responsibility (RSA) in the financial sector has shown evolution, even in emerging markets, such as Brazil. There are local actions, where each country creates laws to stimulate social and environmental responsibility.

Previous studies have evaluated the benefits of investments in socio-environmental actions [7, 38, 45]. These studies emphasize that RSA investments of companies in general, and of banks in particular, have the benefit of promoting more positive, confident, loyal behavior in consumers and lead to a higher price for products and services.

And, in this continuous concern to broaden responsible attitudes seeking social and environmental evolution, Resolution nº. 4,327/2014 provided the guidelines that must be observed in the establishment and implementation of the Socio-Environmental Responsibility Policy (PRSA) by financial institutions and other institutions authorized to operate by the Company. Central Bank of Brazil, as shown in Table 1.

Therefore, as of Resolution nº. 4,327/2014, it is possible to analyze compliance with the guidelines proposed by Bacen, and by financial institutions that operate at the Brazilian stock market. The PRSA makes it possible to verify the transparency of the interested parties and the possibility of loss resulting from socio-environmental damages, in case of non-compliance generated by the socio-environmental risk.

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Table 1. Guidelines observed at the establishment of the PRSA of the Resolution nº 4,327/2014

The PRSA must contain principles and guidelines that guide social and environmental actions in business and in relation to stakeholders (Article 2).
The PRSA should establish guidelines on the strategic actions related to its governance, including for socio-environmental risk management purposes (Article 2, §2).
The institutions mentioned in art. 1 shall encourage the participation of interested parties in the process of drawing up the policy to be established (Article 2, §3).
The PRSA must be evaluated every five years by the board of directors and, if there is one, by the board of directors (Article 2, §5º).
The institutions mentioned in art. 1) shall maintain a governance structure compatible with its size, nature of its business, complexity of services and products offered, as well as the activities, processes and systems adopted, to ensure compliance with the objectives of the PRSA (Article 3).
Constitution of a socio-environmental responsibility committee (Article 3, §2º).
Socio-environmental risk management (Article 4).
Plan of action for implementation of the PRSA (Article 9).

Source: [3].

By adhering to RSA policies, organizations have the "Triple Results". First, they are economically viable because they seek responsible profits, create jobs, have tax contributions, innovative products, processes and corporate governance practices. Second, organizations are environmentally friendly as they reduce inputs, waste and repair the environment, have conscious consumption with their spending and procurement. Third, they are socially fair, by respecting the labor and human rights of their stakeholders, they do not accept bias and discrimination, and generate social development in their host countries [46].

Previous studies have evaluated action and the benefits of investing in socially and environmentally responsible countries [45, 7, 38]. These studies emphasize that investments in RSA by companies in general, and banks in particular, have the benefit of promoting a more positive, confident, loyal conduct among consumers and leading to higher prices for products and services.

3. Social and Environmental Responsibility and Economic Performance

Brazil followed the banking consolidation trends of developed countries, with the decrease in the number of financial institutions and the increase in banking concentration. However, this trend was not fully observed, as the financial intermediation margin has remained high, in result of Brazilian macroeconomic instability and public debt growth; although fee income has grown, it still has a low share of total banking income, which is explained by the high income provided by financial intermediation [16].

Overall, financial institutions are efficient in their economic performance [9]. However, in the period of the subprime crisis, Brazilian's financial institutions showed worsening economic performance indices [29]. In this sense, the disclosure of socio-environmental information can help financial institutions in maintaining economic performance even in times of global crisis [23]. Several surveys have already proven the existence of a positive relationship between the socio-environmental indicator and the economic performance of return on assets [32].

Thus, a study of data from 1900 to 1915 found that regulators imposed contingent liabilities on bank's shareholders to discourage risk-taking and found that banks subject to stricter liability rules have less equity and asset volatility, as well as lower equity assets. They are less likely to increase their investments in risky assets when their equity decreases. That is, the higher the contingent liability, the lower the shareholder's equity [21].

Recent national studies have analyzed some variables of economic performance with socio-environmental responsibility. To this end, an investigation that correlated environmental performance with the economic performance of 48 companies listed in B3 concluded that environmental performance and economic performance are not correlated. In the study, results showed that corporate indebtedness and the level of environmental impact negatively affects economic performance (ROA) [37].

In an analysis of the relationship between socio-environmental indicators and economic performance in public companies in the electricity sector that make up the Bovespa Index, from 2009 to 2015, the results confirm that both the return on assets (ROA) and the return on (ROE) similar results when compared with socio-environmental investments and company's size, and it is clear that internal socio-environmental indicators have a direct and significant link with organizational results, showing that investing in employees tends to produce positive economic results for companies [43].

Finally, the study that identified the percentage of contingent liabilities represented in relation to shareholder's equity, indicated that the recognition of contingent liabilities caused approximately a 100% reduction in the profit of 60 of the analyzed companies. The author points out that the expected value of contingent liabilities disclosed by the companies is only an estimate, which may or may not be realized [25].

4. Methodology

The research used as procedures the collection of documentary data, identifying the information on corporate governance structure and risk management of each financial institution, available on the B3 website in Reference Form,

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related to the PRSA of Resolution nº. 4,327/2014. Subsequently, using financial statement information, economic performance indicators were calculated. As for the objectives the research is characterized as descriptive and as the approach of the problem has quantitative characteristic.

The research population consisted of 38 financial institutions, classified in the economic sector of B3 as Financial and Others. Initially, institutions other than the banking segment were excluded, three from the Credit and Financing and three from the Leasing Company segment. Subsequently, those that did not present enough data to compose the study variables were excluded. The final sample consisted of 22 financial institutions.

In order to meet the proposed objective, we analyzed the information disclosed on the website, more specifically, in the Social and Environmental Responsibility Policy of each of the financial institutions listed in B3, to know on what date each of them adhered to the PRSA, as shown in Table 2.

Table 2. Financial Institutions Composing the Sample

Based on the content analysis of the information disclosed in the Social and Environmental Responsibility Policy of each institution and in the Reference Form, it was identified the

Financial Institutions	NGC - B3	Creation of PRSA
BANCO ABC BRASIL S.A.	N2	28/08/2014
ALFA HOLDINGS S.A.	MB	30/11/2015
BANCO DO ESTADO DO ESPÍRITO SANTO - BANESTES	MB	14/09/2015
BANCO ALFA DE INVESTIMENTO S.A.	MB	30/11/2015
BANCO AMAZÔNIA S.A.	MB	25/05/2015
BANCO BRADESCO S.A.	N1	23/02/2018
BANCO DO BRASIL S.A.	NM	10/02/2015
BANCO DO ESTADO DE SERGIPE S.A. - BANESE	MB	2016
BANCO DO ESTADO DO PARÁ S.A.	MB	2015
BANCO ESTADO DO RIO GRANDE DO SUL S.A. - BANRISUL	N1	2014
BANCO INDUSVAL S.A.	N2	10/03/2016
BANCO MERCANTIL DO BRASIL S.A.	MB	01/07/2015
BANCO NORDESTE DO BRASIL S.A.	MB	29/06/2015
BANCO PAN S.A.	N1	2015
BANCO BTG PACTUAL	N1	2014
BANCO PINE S.A.	N2	2015
BANCO SANTANDER (BRASIL) S.A.	MB	27/02/2015
BANCO MERCANTIL DE INVESTIMENTOS S.A.	MB	01/07/2015
BRB BCO DE BRASILIA S.A.	MB	2015
ITAÚ UNIBANCO HOLDING S.A.	N1	2014
ITAUSA INVESTIMENTOS ITAU S.A.	N1	2014
PARANÁ BANCO S.A.	MB	01/08/2015
Notes: (NM) New Market; (N1) Level 1 of Corporate Governance; (N2) Level 2 of Corporate Governance; (MB) Traditional Counter.		

Source: listing of B3

Some financial institutions disclosed the specific date of joining the PRSA, but others, only the year (Table 2). According to Bacen Resolution nº. 4,327/2014, financial institutions had the deadline of July 2015, according to the timetable defined by the resolution, for the beginning of the actions corresponding to the action plans. It was possible to find this disclosure by directly accessing the website of each of the Financial Institutions and those who did not present the information in a clear way, it was possible to confirm on the B3 website through the Reference Form.

Corporate Governance Structure and Risk Management mechanisms, implemented or improved as of Resolution nº. 4,327/2014.

After the analysis, the study sought to identify the possible improvement in organizational performance based on the adherence to the Social and Environmental Responsibility Policies. The data for the years 2012, 2013 and 2014 were analyzed three years before the implementation of the resolution and the data for the years 2015, 2016 and 2017, comprising three years after the implementation of the resolution. Performance indicators were calculated from information collected in the Economatica® database and the B3 website.

Table 3 shows the variables that represent the economic performance and the form of operationalization.

Table 3. Research Variables

	Variable	Measurement	Source of data	Base authors
Performance indicators	Estimate of losses with doubtful accounts (LOSSES)	Natural logarithm of the amount accounted for as losses.	Economatica®	[15,46]
	Current liquidity (LC)	Current assets / current liabilities	Economatica®	[19,13,24]
	Returns on Assets (ROA)	(Net income / total assets) x 100	Economatica®	[13,24]
	Company size (SIZE)	Natural logarithm of total assets	Economatica®	[34,36]
	Indebtedness (DEBT)	(Current liabilities + non-current liabilities) / shareholders equity	Economatica®	[14]
	Growth of Shareholders' Equity (GSE)	(Shareholders equity year 2 – shareholders equity year1 / shareholders equity year1) x 100	Economatica®	[2,27]
	Growth of Value Added (GVA)	(Value added year 2 - value added year 1) / value added year 1 x 100	B3	[14,47]
	Contingent Liabilities (CONT)	Natural logarithm of the amount evidenced in the explanatory notes	Explanatory Notes - B3	[41]

Source: prepared by the authors.

The justification for the choice of performance indicators is structured in the understanding that they are information used to measure and improve progress towards environmental goals and actions and can meet the informational needs of business managers and others who are interested in knowing [23].

In the data analysis we used the mean differences test to verify if there is a difference in the economic performance of financial institutions before and after the promulgation of the resolution of the social and environmental responsibility policy.

Preliminarily, the Kolmogorov-Smirnov test was performed to identify whether, or not the variables present normal distribution [22]. For economic performance variables with normal distribution, the Levene test and t-test of independent samples were used. They are applied when the variable under study presents normal distribution, when the population variance is not known, and the objective is to test whether or not a population mean assumes a certain value [22].

Finally, in the economic performance variables with non-normal distribution, the nonparametric Mann-Whitney test was used. This is one of the most powerful nonparametric tests, being mandatory the fact that the analyzed variable is measured in ordinal or quantitative scale. The application of the main difference test aims to verify if there is a significant difference between the initial and final perceptions of the students of the subjects studied [22]. All statistical tests were applied using SPSS software.

5. Analysis and Interpretation of Results

This stage of the research consists of the analysis of the analysis performed based on the systematization presented in Table 4, of the Corporate Governance Structure and the Risk Management of each Financial Institution. We sought to verify if such structures presented are being exposed in accordance with Resolution nº. 4,327/14.

The results showed that the financial institutions that most complied with the Corporate Governance and Risk Management Framework were ABC BRASIL, ALFA and BANESE with 11 items in accordance with the PRSA. Followed by ALFA HOLDINGS, AMAZONIA, BRADESCO and PARANA with 10 items attended. No IF complied with the 12 items, with 6 items of Corporate Governance and 6 items of Risk Management, ranging from 1 to 11 items.

Table 4. Systematization of Research

Financial Institutions	**Corporate Governance Structure**						**Socio-environmental risk management**						
	I	**II**	**III**	**IV**	**V**	**VI**	**I**	**II**	**III**	**IV**	**V**	**VI**	**Total**
ABC BRASIL	x	x	x	x	x	x	x	x		x	x	x	11
ALFA	x	x	x	x	x	x	x	x	x	x	x		11
ALFA HOLDINGS	x	x	x	x	x	x	x	x	x		x		10
AMAZONIA	x	x	x	x	x	x	x	x			x	x	10
BANESE	x	x	x		x	x	x	x	x	x	x	x	11
BANESTES	x	x	x	x	x	x	x	x		x			9
BANPARÁ	x	x						x		x		x	5
BANRISUL	x	x	x	x	x	x	x	x			x		9
BCO BRASIL	x				x	x	x	x				x	6
BRADESCO	x	x	x	x	x	x	x	x	x			x	10
BRB												x	1
BTG PACTUAL			x		x	x	x	x					5
INDUSVAL	x	x											2
ITAU UNIBANCO	x	x			x			x				x	5
ITAUSA	x											x	2
MERCANTIL	x	x					x				x	x	5
MERCANTIL INVEST.	x				x	x		x			x	x	6
NORDESTE	x	x	x		x	x	x	x					7
PAN					x		x	x				x	4
PARANA	x	x		x	x	x	x	x	x	x		x	10
PINE	x	x			x	x						x	5
SANTANDER	x	x			x	x	x	x		x		x	8
TOTAL	19	16	10	8	17	15	15	17	5	7	8	15	152

Legend: Governance: I - Implement actions under the PRSA; II - Monitor compliance with the actions established in the PRSA; III - Evaluate the effectiveness of the implemented actions; IV - Identify any deficiencies in the implementation of actions; V - Socio-environmental responsibility committee; VI - If adopted, the Committee shall disclose its composition, including in the case of being integrated by an external interested party to the institution; Risk management: I - Socio-environmental risk must be identified by FIs as a component of the various risk modalities to which they are exposed; II - systems, routines and procedures to identify, classify, evaluate, monitor, mitigate and control the socio-environmental risk present in the activities and operations of the institution; III - data recording of actual losses due to social and environmental damages, for a minimum period of five years, including values, type, location and economic sector object of the operation; IV - prior assessment of the potential negative social and environmental impacts of new product and service modalities, including reputation risk; V - procedures for adequacy of socio-environmental risk management to legal, regulatory and market changes; VI - FIs should establish specific criteria and mechanisms for risk assessment when carrying out operations related to economic activities with greater potential to cause social and environmental damages.

Source: survey data.

The results showed that the most completed Corporate Governance and Risk Management items were: item I of the Corporate Governance Structure with 19 Financial Institutions that implemented in accordance with the standard, item V also of the Corporate Governance Structure with 17 Financial Institutions that implemented according to the norm and item II of Risk Management with 17 Financial Institutions that adhered according to the norm. The remaining items were accomplished in a smaller

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quantity and no item was fulfilled by all the institutions.

The most publicized items are in accordance with the premise that companies are interested in disclosing social and environmental actions to shareholders and other stakeholders, a fact evidenced by the growing increase in shares disclosed in the financial statements spontaneously [42]. These motivations have made companies increase the volume of reports and information related to sustainability practices. This behavior is associated to the concern with the legitimacy of the organization in the market in which it is inserted, as well as, due to the concern in guiding the investors with information that highlights the companies awareness regarding their management practices and their concern with environmental and climatic conditions issues [6].

Table 5 shows some of the main actions declared by financial institutions as part of their routine monitoring, evaluation, possible deficiencies, committee and disclosure of the composition of the committee.

Table 5. Corporate Governance Structure

Unid	Actions Implemented in the Corporate Governance Structure
I	Customer-centered socio-environmental risk management, not just the products and services offered; Updating of information provided by clients; Reassessment of practices to mitigate socioenvironmental risks and evaluate the need to include new economic sectors that could be critical to assess this risk.
II	Establishment of specific criteria to assess the risk with the greatest potential to cause social and environmental damages; Establishment of credit granting and monitoring processes that can identify the adequate compliance with social and environmental legislation by clients.
III	The evaluation of the effectiveness of the implemented actions belongs to the group of activities of Credit Analysis; The General Secretariat, through the Management of the Strategic Socio - Environmental Management Group, is responsible for: Evaluating the effectiveness of the implemented actions and identifying possible deficiencies in the implementation of the actions.
IV	The identification of any deficiencies in the implementation of the actions is the responsibility of the Internal Audit; The Internal Controls Management analyzes the possibility of losses resulting from failure, deficiency or inadequacy of internal processes, people and systems, or from external events.
V	Operational and Socio-Environmental Committee; The Socio-Environmental risk analysis is done by the competent committees, that is, before the approval of the credit is sent to the committee to make an evaluation; Risk-related governance also includes the Socio-Environmental Risk Committee.
VI	The disclosure under the composition created for this purpose is included in the topic Risk Management, in the item Structure of Governance - The Organizational Structure of Risk Management. The composition of the committee is disclosed in the Organizational Structure of risk management.

Source: survey data.

It can be seen from Table 5 that the main concern of financial institutions is focused on properly responsible social and environmental credit, as well as, to adapt the Corporate Governance structure to meet the requirements of Resolution nº. 4,327/2014 and to establish committees properly appropriate to comply with the requirements imposed, as well as, have actions focused on socio-environmental practices and more than that, through the committee to check if these actions were implemented and if their activities are harmful to society or the environment.

Table 6 shows some of the main risks declared by Financial Institutions, as well as their actions to mitigate, monitor, evaluate and combat socio-environmental damages, as well as risk prevention systems and procedures for adaptation to legal changes and identification risk of causing harm.

Table 6. Socio-environmental risk management

Unid	Actions implemented for Socio-environmental Risk Management
I	Identification of socio-environmental risk as a component of the risk modalities that the institution is exposed to; Among the components of the various risk modalities that the bank is exposed to is the Socio-Environmental Risk;
II	Issuance of periodic management reports to senior management on the performance of the Bank's credit risk management as a result of the policies and strategies adopted; Perform stress test to verify possible impacts that could occur due to extreme conditions.
III	It does not have a record of actual losses due to social and environmental damages, and that controls the Internal Controls and Risk Management sector.
IV	The Nucleus of Strategic Business Projects (NUPRO) will be responsible for the prior evaluation of the potential negative social and environmental impacts of new product and service modalities; The Capital and Risk Management Area should also assess the potential risks of the new products and services created.
V	The Legal Department is responsible for maintaining adherence to the socio-environmental legislation of the contracts used with customers, suppliers and service providers; The Integrated Management Committee for Credit, Treasury, Risks and Capital Allocation ensures adherence to the regulations, laws, codes, norms and standards related to risks, capital and internal controls.
VI	Segregation of functions in the risk and capital management process is anchored in three lines of defense: (i) the first line is responsible for managing and controlling the business and risks arising from these businesses; (ii) the risk and control areas act as a second line of defense, acting in an integrated manner to the business, but independent, in order to ensure compliance with policies, limits and criteria for risk assessment and measurement; and (iii) the Internal Audit acts as a third line of defense pointing to possible deficiencies in the system of internal controls and risk and capital management.

Source: survey data.

It can be seen in Table 6 that in relation to customer lending concerns, item II of Risk Management, 17 institutions have a system, routine and procedures that allow to identify, monitor, mitigate and control the socio-environmental risk present in activities and operations. These include the credits provided to customers and the way companies are managing and investing these resources so as not to degrade the environment. That is, it is not enough to provide the customer resource, it is necessary to make sure that they are being used correctly and respecting the

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socio-environmental practices.

After analyzing the evidence of compliance with the PRSA of financial institutions, we sought to verify the econometric model adhering to the analysis of the change in performance indicators from the adoption of the PRSA. In this sense, Table 7 demonstrates the normality test of the data.

Table 7. Kolmogorov-Smirnov test to evaluate the normality of the data

	LOSSES	LC	ROA	SIZE	GSE	GVA	CONT
N	132	132	132	132	132	132	132
Test Stats	0,316	0,364	0,239	0,107	0,300	0,445	0,377
Significance	0,000*	0,000*	0,000*	0,001*	0,000*	0,000*	0,000*

Source: survey data.

It can be observed that all variables violated the hypothesis of normal distribution of data. Thus, the nonparametric Mann-Whitney test is used for subsequent analysis, as it is the most efficient method for treating abnormally distributed data [22]. The samples were defined by group 1, covering the years 2012, 2013 and 2014 and group 2, covering the years 2015, 2016 and 2017 [22]. Table 8 presents the results of the Mann-Whitney test, in order to identify if there was a variance between the companies' performance before and after the PRSA requirement.

Table 8. Results of the non-parametric Mann-Whitney test

Variable	Groups	N	Average places	Sum of Ratings	Significance
LOSSES	1,00	66	62,87	4149,50	0,276
	2,00	66	70,13	4628,50	
LC	1,00	66	64,71	4271,00	0,589
	2,00	66	68,29	4507,00	
ROA	1,00	66	68,10	4494,50	0,631
	2,00	66	64,90	4283,50	
SIZE	1,00	66	64,67	4268,00	0,582
	2,00	66	68,33	4510,00	
GSE	1,00	66	73,86	4875,00	0,027*
	2,00	66	59,14	3903,00	
GVA	1,00	66	66,20	4369,00	0,927
	2,00	66	66,80	4409,00	
CONT	1,00	66	59,65	3937,00	0,040*
	2,00	66	73,35	4841,00	

Note: * Significance at the level of 5%

Source: survey data.

The results of Table 8 indicate that after the PRSA implementation requirement, financial institutions in Brazil started to estimate higher amounts for doubtful loans, total assets increased, the value added produced increased, and liquidity ratios also improved. However, despite the increase in these variables (mean positions), the differences were not statistically significant. Therefore, it is not possible to make assumptions about changes in these indicators after the adoption of the PRSA.

In relation to the contingent liability, it is noted that there was an increase in disclosure in explanatory notes, whose difference was statistically significant at the 5% level. Therefore, as of Resolution nº. 4,327/2014, financial institutions started to identify higher volumes of contingent liabilities, with the potential to affect profits and shareholder equity in the future. Regarding the growth of the shareholders equity (GSE), the results indicated that in the period after Resolution nº. 4,327/2014 the reverse occurred, that is, a reduction in equity.

It is suggested that the reduction of the GSE after the adoption of the PRSA may be a consequence of the increase in the level of disclosure of the contingent liabilities, as already reported by [22].These authors identified that growth in shareholders equity prevails in organizations with lower levels of disclosure of environmental contingent liabilities. In addition, the increase in the disclosure of the contingent liabilities can cause financial losses that are reflected in the decrease of the shareholders equity [27].

Finally, it is concluded that the adoption of Resolution no. 4,327 / 2014 led to a reduction in shareholders equity by offering consistency the inference that this indicator has been constantly impacted by regulatory changes [18].

6. Considerations

It was concluded that the objective of the study was reached, since it was intended to verify if the financial institutions implemented the PRSA mechanisms (what actually occurred), provided for in Resolution nº. 4,327/14, and if the economic performance adoption (a fact that has also changed). This is because these guidelines of law have brought greater rigor and accountability to the financial capital lent by banks to diverse creditors. In order to obtain better results from the implementation of Resolution nº. 4,327/2014 after the PRSA (group 2).

The evidence suggests that financial institutions, starting with Bacen Resolution 4,327/2014, began to have a different look at Contingent Liabilities, generating greater recognition of this factor, which, consequently, increases expenses and reduces shareholders equity. This factor, despite reducing the shareholders equity, contributes to an informational increase of the financial institutions before the capital market, auditors, investors and other interested parties in the disclosed information.

The main results of the study are found in the two performance indicators, shareholders equity and Contingent Liability, because both showed significant changes in relation to the adoption of the PRSA. These indicators were

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directly influenced by the adoption of the PRSA in the Financial Institutions in the period after adoption, meeting the expectations of this research. This finding confirms that the recognition of contingent liabilities generates a reduction in the net worth of organizations [21, 25].

In general, it is possible to consider some interesting research insights, such as: effectiveness in the adoption of socio-environmental responsibility policies by financial institutions; improvement in corporate governance structure and risk management from the PRSA; recognition of contingent liabilities. It is concluded that PRSA enables financial institutions to gain credibility and reputation regarding their stakeholders, with a view to improving responsible management and information transmitted in the financial statements from the recognition of contingent liabilities that were probably hidden.

The theoretical contribution of this study is the understanding that financial institutions are companies that generally inspire doubt and skepticism about the information they advertise, even in relation to the advertisement of their products and services [31]. In this sense, consumer mistrust and doubt about a company and its RSA activities may diminish the effectiveness of evaluations of these initiatives [20, 48]. Consumers tend to prefer relationships with companies that have a good image, ethical stance, and act responsibly. In response, companies, like financial institutions, seek to rethink their strategies to meet these demands and seek to reduce the environmental and social risks resulting from their actions.

Finally, the findings indicate that Project Finance is more effectively monitored based on the social and environmental responsibility policies of the central bank of Brazil. Thus, it contributes by suggesting that PRSA brings more efficient mechanisms for financial institutions to evaluate projects with high social and environmental risk. This gives stakeholders greater confidence, given that companies that make large investment projects need to raise funds through financial institutions. Thus, it is concluded that financial institutions are contributing to a more just and supportive society. In addition, it can be concluded that PRSA minimizes flaws in the equator's principles, especially in the transparency and monitoring of project financing with socio-environmental impacts.

Considering that only the contingent liabilities and the variable of shareholders equity presented statistically significant differences after the adoption of the PRSA, it is suggested that future investigations cover other performance indicators and, in addition, that perform the analysis of the influence of other items presented in the Bacen Resolution nº. 4,327/2014, since the Governance and Risk Structures were well explored in this research. Thus, a qualitative interpretation covering the other items of the resolution may bring important results to stakeholders, especially bank clients, and to the central bank's analysis of the loans and financing granted.

Declaration

The authors declare that there are no conflicts of interest.

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