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Institutional analysis and development framework applied to Brazilian mutual credit guarantee societies

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Abstract

This study aimed to apply the concepts of the Institutional Analysis and Development (IAD) Framework to Brazilian mutual credit guarantee societies (SGC). They are organizations that facilitate access to credit for small businesses through risk sharing. They are created and managed collectively, with peculiar characteristics, and adapted to their territories, like common goods. Exploratory and descriptive method was used to deepen the reality of SGC, bibliographical research in secondary sources, to carry the concepts of the IAD Framework and in primary sources to capture the SGC's day-to-day. This reality was confronted with IAD Framework which tested SGC's common good characteristics. It was concluded that the tool is adequate for studying SGC. The framework proved robust, allowing to examinate details of these attributes, and providing a deep reflection on the SGC's management and reality.

Keywords: Governance. Common Goods. Credit Guarantee. Credit Guarantee Society. IAD Framework.

Institutional Analysis and Development Framework aplicado às garantidoras de crédito brasileiras

Resumo

O objetivo do estudo aqui apresentado foi aplicar os conceitos do Institutional Analysis and Development (IAD) Framework às sociedades de garantia mutualista de crédito brasileiras (SGC). Essas organizações facilitam aos pequenos negócios o acesso ao crédito por meio do compartilhamento de risco. São criadas e gerenciadas de maneira coletiva, situação que as aproxima do conceito de bem comum. O método utilizado foi exploratório e descritivo, com o intuito de aprofundar a compreensão da realidade das SGCs. Foi utilizada pesquisa bibliográfica em fontes secundárias, para sustentar os conceitos do IAD Framework, e em fontes primárias, para capturar o dia a dia das garantidoras. Essa realidade foi contextualizada em relação ao IAD Framework, que testou as características de bem comum das SGCs. Concluiu-se que o *framework* é adequado para o estudo das SGCs, tendo demonstrado robustez ao permitir o exame desses atributos com bom nível de detalhamento e proporcionado reflexão profunda sobre a gestão e a realidade dessas organizações.

Palavras-chave: Governança. Bens comuns. Sociedades Garantidoras de Crédito. Sociedades de Garantia de Crédito. IAD *Framework*.

Institutional analysis and development framework aplicado a las sociedades de garantía recíproca brasileñas

Resumen

El objetivo del estudio aquí presentado fue aplicar los conceptos del Marco de Análisis y Desarrollo Institucional (Marco ADI) a las sociedades de garantía recíproca (SGR) brasileñas. Estas organizaciones facilitan el acceso al crédito a las pequeñas empresas a través del riesgo compartido. Se crean y gestionan colectivamente, hecho que las acerca al concepto de bienes comunes (RUC). Se utilizó el método exploratorio y descriptivo para profundizar en la comprensión de la realidad de las SGR. También se utilizó la investigación bibliográfica, en fuentes secundarias, para respaldar los conceptos del Marco ADI y, en fuentes primarias, para captar el día a día de las SGR. Esta realidad se contextualizó en relación con el Marco ADI, que puso a prueba las características de RUC de las SGR. Se concluyó que el marco es adecuado para el estudio de las SGR, dado que mostró robustez, permitiendo el examen de esos atributos con un buen nivel de detalle y proporcionando una reflexión profunda sobre la gestión de estas organizaciones y su realidad.

Palabras clave: Gobernanza. Bienes comunes. RUC. Sociedad de garantía recíproca. Marco ADI.

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INTRODUCTION

Brazilian mutual credit guarantee societies (*sociedades de garantia mutualista de crédito* – SGCs) are formed by companies and business associations, supported by credit cooperatives, governments, and other entities involved in regional development (Santos, 2013). Mutual guarantee is based on the sharing of credit risk, statistically distributing it among the various borrowers of financial resources (Townsend, 1995).

SGCs serve small businesses, complementing credit guarantees from financial agents, according to the Brazilian Micro and Small Business Support Service (Sebrae, 2013). The actions of these organizations help reduce interest rates and overcome the lack of real guarantees, which are the two biggest barriers to obtaining credit (Casarotto Filho & Amato Neto, 2013). According to Sebrae (2022, p. 32), in the first six months of 2022, the "[...] lack of real guarantees, the very high interest rate, and the lack of a guarantor were the three most cited difficulties for obtaining new loans or financing."

SGCs have existed in Brazil since 2003. In countries like France and Italy, they are centuries-old institutions. The first Brazilian SGC was the Serra Gaúcha Credit Guarantee Association (Garantiserra, now known as RS Garanti), established in the city of Caxias do Sul (Rio Grande do Sul – RS) by businesspeople inspired by the Italian model. It had the support of the Inter-American Development Bank (IDB), *Sebrae Nacional*, the government of the state of Rio Grande do Sul, local city halls, commercial associations, unions, and other entities in the region (Cavinato, 2014).

The expansion in the number of SGCs in Brazil from 2010 onward is due to Sebrae, which, in 2008, allocated R$30 million to a public call for the establishment of SGCs (Castro, 2014). The capital relationship with Sebrae, which exclusively serves micro and small companies, and the influence of the European credit guarantee model on Brazilian SGCs explains the exclusive service to small businesses (Cavinato, 2014), carried out by the 16 credit guarantee societies existing in Brazil until the end of 2022 *(Sociedade Garantidora de Crédito Central* [SGC Central], 2023).

The diverse institutional typology seen in the support received during the creation of Brazilian SGCs denotes a peculiar characteristic. Why would companies, employers' and workers' unions, banks, cooperatives, governments, and development agencies, among others, unite around a financial mechanism? Wouldn't it be more 'logical' for this to be implemented solely by the banks or the benefiting companies, as they are the direct beneficiaries of SGCs? To address these questions, Heidegger's (2007) ideas about technique suggest that there is more to this action than simply addressing credit issues. There may be a deeper reason due to the type of organization benefiting and its importance to Brazilian society. Small businesses, which are the primary targets of SGCs, are almost all local companies and account for more than half of the formal jobs in the Brazilian economy (Sebrae, 2020). Beyond the economic aspect, it is important to explore the universe of small businesses and explain their contribution to the identity of the spaces where people interact. Many people spend more than a third of their day in these workplaces, engaging and creating identities based on cultural, political, economic, environmental, and social factors of their territory (Albagli, 2004; Santos, Souza & Silveira, 1994).

It can be stated that smaller organizations are important elements in the social fabric, according to Durkheim (1999). Additionally, it can be inferred that small businesses or guarantors may exhibit characteristics of common goods, as described by Bollier (2014). This perspective frames the combination of a determined community with a set of social practices (values and norms) for its maintenance and growth.

In the context of the commons, Ostrom (1990, 2005) identified, through extensive research on the topic, that the principles of good governance of the commons, according to Thiel, Blomquist, and Garrick (2019), generally emerge from practice rather than being planned at an early stage. Based on these studies, Ostrom (2005) proposed the Institutional Analysis and Development Framework (IAD Framework). This mechanism, according to Capelari, Araújo, and Calmon (2015), McGinnis (2011), McGinnis and Walker (2010), and Poteete, Jansen, and Ostrom (2010), is appropriate for studying collective actions and their dilemmas, functioning as a systematic conceptual map for analyzing institutional foundations and decisions within community-type enterprises.

Thus, the general objective of this study consists of: **applying the concepts of the IAD Framework to Brazilian credit guarantors** to deepen knowledge about them, avoiding the traditional economic and financial approaches typically applied to this type of organization. This can be seen in works organized by the World Bank (2020, 2023), the Organization for Economic Cooperation

and Development ([OECD], 2020), and the *Asociación Latinoamericana de Instituciones Financieras para el Desarrollo* ([ALIDE], 2018).

To achieve this objective, a scientific approach based on exploratory and descriptive research was established. Bibliographical research in secondary sources was used to conceptualize the IAD Framework, while primary sources (laws, decrees, reports, statutes, etc.) were used to gather information on the functioning of SGCs and credit guarantee mechanisms, including relevant legislation. The next step was to contextualize the characteristics of SGCs within Ostrom's framework. Data on SGCs was sourced from SGCs Central (2020, 2023), with the analysis period covering 2019 to 2022.

This research may be useful in several contexts: for the internal management of each SGCs or the Central SGCs; in understanding and qualifying the relationship between SGCs and their surroundings; in the creation of public policies that utilize SGCs to positively impact regions; and even in generating scientific studies on the topic, which is still relatively unexplored in Brazil.

In addition to this introductory section, the study is divided into four more sections. First, the theoretical analysis of the IAD Framework and the guarantors is explored in depth. Next, the operational landscape of Brazilian SGCs is described. Following this, the IAD Framework is applied to the context of these guarantors. Finally, the fourth section presents the conclusions of the study.

THEORETICAL REFERENCE

Ostrom's framework (2005) has varied applications: it is used to analyze environmental contexts, as demonstrated by Horndeski and Koontz (2020); to examine public and institutional policies, as seen in Schlager and Villamayor-Tomas (2023); and even for proposals and tests of computational models that simulate the application of the IAD Framework, as shown in the research by Montes, Osman, and Sierra (2022).

This demonstrates the versatility of the framework, making it a valuable reference for the present study.

IAD Framework by Elinor Ostrom

For Ostrom (2010), commons are scarce goods with two main characteristics. The first is subtraction, meaning that the unscheduled withdrawal of system resources by some users affects the amount available to others. The second is the difficulty of excluding or limiting access, indicating that it is complex or difficult to prevent any potential user from accessing these common goods.

Ostrom (1990) presented a model for analyzing the institutional processes in organizations that deal with common goods and are collectively managed: the IAD Framework. According to Ostrom (2005), institutions are made up of formal and informal norms, materialized in shared rules and conceptions, which shape individual and social behavior and choices. These standards are collectively developed, applied, modified, and controlled.

In a broader concept, North (1991, p. 97, **our translation**) states that:

> [...] institutions are human-created constraints that structure political, economic, and social interactions. They consist of informal constraints (sanctions, taboos, customs, traditions, and codes of conduct) and formal rules (constitutions, laws, property rights). Throughout history, institutions have been designed by humans to create order and reduce uncertainty in exchanges.

According to McGinnis (2020), institutions function as both restrictions and/or opportunities that shape the processes of individual and collective choices, as well as the consequences of these choices for oneself and others. Institutions cannot be fully understood if analyzed in isolation from the institutional settings in which they are embedded.

To understand the proposition of Elinor Ostrom and her colleagues, it is essential to comprehend the model of rationality on which their proposal is based.

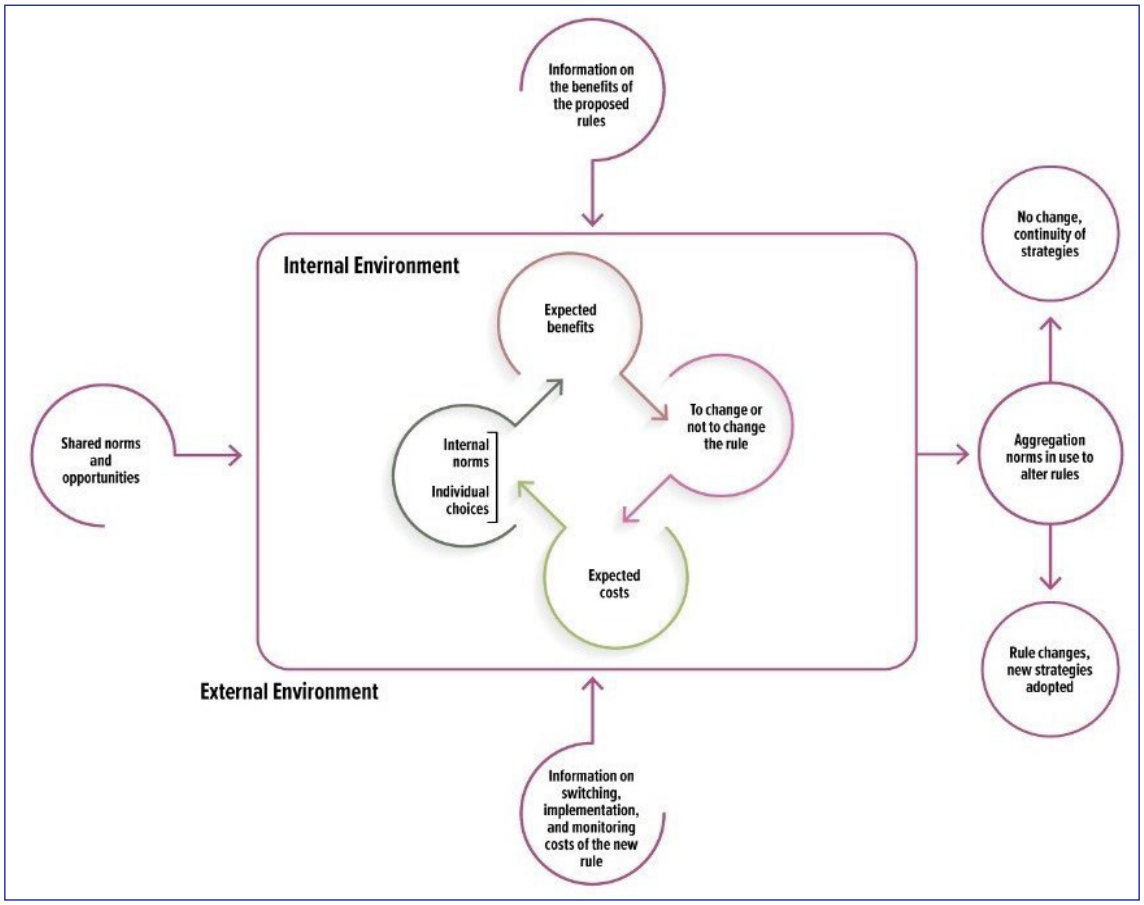
Olson (1965) and Hardin (1968), among others, influenced Ostrom's work in studying the dilemma of collective action (which involves making choices or decisions that benefit the collective, even if they appear unfavorable to individuals). These authors

were pessimistic about the possibility of communities self-organizing and overcoming this dilemma. Hardin (1968) argued that preventing the extinction of common goods is only feasible through private or public management, dismissing collective management as effective. Similarly, Olson (1965), skeptical of collective action, advocated for the necessity of a sponsor or strong leadership to prevent the extinction of common goods.

Ostrom's team analyzed hundreds of cases in which the preservation of the common good prevailed over individual action, even in the long term, opposing the theories of Hardin (1968) and Olson (1965).

Ostrom (1990) proposed that there are always two possibilities for collective choice: individual choices in the process of institutional change or changing a rule by amending it or maintaining it. She identified the variables that influence this choice, classifying them primarily as internal and external, as shown in Figure 1.

Figure 1
Variables affecting institutional change for Ostrom



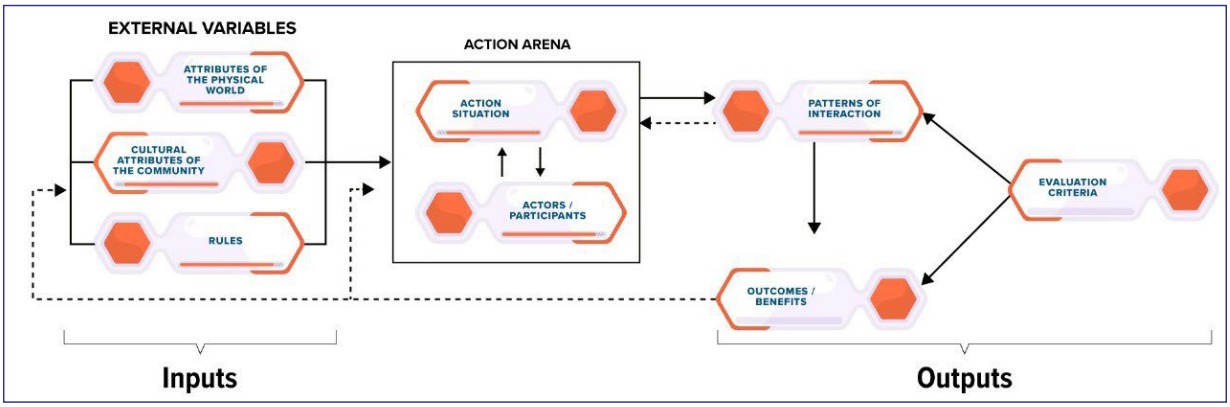
Source: Adapted from Ostrom (1990, p. 193, our translation).

The internal factors concern expected benefits and costs, internalization of norms, and individual choices — factors that Ostrom calls "discount rates." These are related to the concept of homo economicus, by Stuart Mill (2020), which describes individuals as motivated exclusively by utilitarian reasons and seeking to obtain maximum profit with minimum effort. In this model of rational analysis, it is assumed that people make decisions that lead to situations where benefits outweigh costs. Ostrom directly addresses the dilemma of collective action by acknowledging the individualism inherent in human beings but not attributing a central role to it in human personality. This approach aligns with the ideas of Serva, Caitano, Santos, and Siqueira (2015), Fernandes and Ponchirolli (2011), and Fernandes (2008), who discuss the existence of different rationalities in organizational life.

Ostrom distinguishes her approach from those of Olson and Hardin by addressing the rationality of people who participate in the management of common goods. She takes into account elements such as information that is generally limited to cognitive capacity and the context in which the common goods and their users are situated (Poteete et al., 2010). For a choice to be correct, decision-makers must have more information about the conditions that may affect the decision or its consequences. Ostrom's research (1990) demonstrated that the actions of some groups can be more beneficial to society (and the economy) than state or private intervention.

In Figure 1, Ostrom (1990) also highlights external variables: shared norms and opportunities, as well as information regarding the benefits and costs of change. These factors influence an individual's decision to support or oppose a change in existing rules. Based on this model of rationality, Ostrom (2005) proposes the IAD Framework (Figure 2).

Figure 2
Ostrom's IAD Framework



Source: Adapted from Ostrom (2005, p. 15, our translation).

It serves as a starting point for the establishment of studies aimed at analysis and institutional change based on the model of the Indiana School or the Ostrom Workshop (The Center in Political Theory and Policy Analysis) at Indiana University, where Vincent and Elinor Ostrom conducted most of their research (Ostrom, 1990).

In Figure 2, the inputs (external variables) represent the current situation itself, reflecting a more conservative perspective that externally influences decisions (or actions). These inputs encompass all aspects of the physical and social environment (including cultural, environmental, and institutional factors), which shape the context for action situations (McGinnis, 2011). Community attributes within this framework include critical themes for effective collective management, such as reputation, trust, and the (homo)heterogeneity of members. According to Sampaio (2004), these attributes house the essence of social capital in management models, enhancing reciprocity and strengthening collective action.

Inputs also encompass rules in use or institutions. Ostrom (2005) aimed to understand how these rules are established and changed, who initiates such creations or changes, and what incentives are provided to those who create, comply with, and modify them for managing common goods. According to Polski and Ostrom (1999), collective choice rules determine who operates the rules and who is eligible to participate in activities affecting the operational level of everyday decision-making. These rules can be intricate for researchers, as they have the flexibility to be adapted or applied to each actor and situation, creating numerous connections and possibilities. Such rules often dictate the characteristics of actions (what is possible, permitted, prohibited, or mandatory) and the consequences if the prescribed actions are not followed (such as punishments).

The attributes of the physical world refer to the characteristics of exclusion or subtraction of resources managed within the community (Ostrom, 2005): who can access the resources and how much can be extracted from the system.

Outputs, according to Ostrom (2005), are the outcomes of interactions that occurred in the action arena and were influenced by inputs. These outputs have a feedback effect, reciprocally influencing both the inputs and the action arena itself, potentially establishing new patterns resulting from these interactions. McGinnis (2011) notes that this adaptive learning process can also lead to changes in action situations by altering perceptions of gain or loss. Marques do Nascimento, Fernandes, Capelari,

Teixeira, and Grin (2021) highlight that these results are evaluated based on criteria such as economic efficiency, equity, transparency, adherence to local values, and sustainability (governance).

Efficiency or economic viability in the context of IAD refers to the benefits generated and resources allocated. The focus is on understanding changes in behavior among interacting actors and the institutional outcomes that result from these interactions (Ostrom, 2010). Equity pertains to the fair distribution of the common good or its benefits in proportion to the efforts made to achieve and preserve it. Transparency is evaluated based on whether actors accurately report outcomes, which can enhance collaboration within the arrangement and facilitate information exchanges (McGinnis, 2011). Conformance with local values involves ensuring that the results of collective action align with and reinforce local culture through the use of local rituals and customs in interactions. The sustainability criterion assesses whether the evaluation of outcomes supports the maintenance or enhancement of environmental or artificial common goods through cooperation among actors (Ostrom, 2010; McGinnis, 2011).

Ostrom (2005, p. 32, **our translation**) emphasizes and defines the action arena as the space "[...] in which two or more individuals are confronted with actions that have the potential to produce some type of result." In this arena, multiple actors interact, driven by individual or organizational motives, exchanging goods and services, gathering information, and perceiving patterns of interaction and their outcomes. From a philosophical perspective, it can be argued that the action arena embodies Heidegger's dasein (2005) and Bollier's concept of commoning (2014), forming an ontological framework for the management of common goods.

For Kiser and Ostrom (1987), any action situation can be seen through seven elements or groups: variety of positions that participants in the situation can occupy, number of participants in each position, range of achievable actions, variety of potential results open to each position, links between actions and potential results, and costs or benefits attributed to actions and results.

The contextualization of these elements within an action situation (involving at least two people) illustrates the complexity of analysis, particularly as the number of variables multiplies with additional participants (Ostrom, 2010). From analyzing actions and their potential benefits and/or costs, isolated variables such as risk, uncertainty, power, and influence emerge. Kiser and Ostrom (1987) suggest examining an action situation from each actor's perspective, akin to assembling building blocks where each of the seven elements represents a piece that interacts with others, potentially repeating aspects of the situation.

RESULTS AND ANALYSIS

Mutual credit guarantors in Brazil

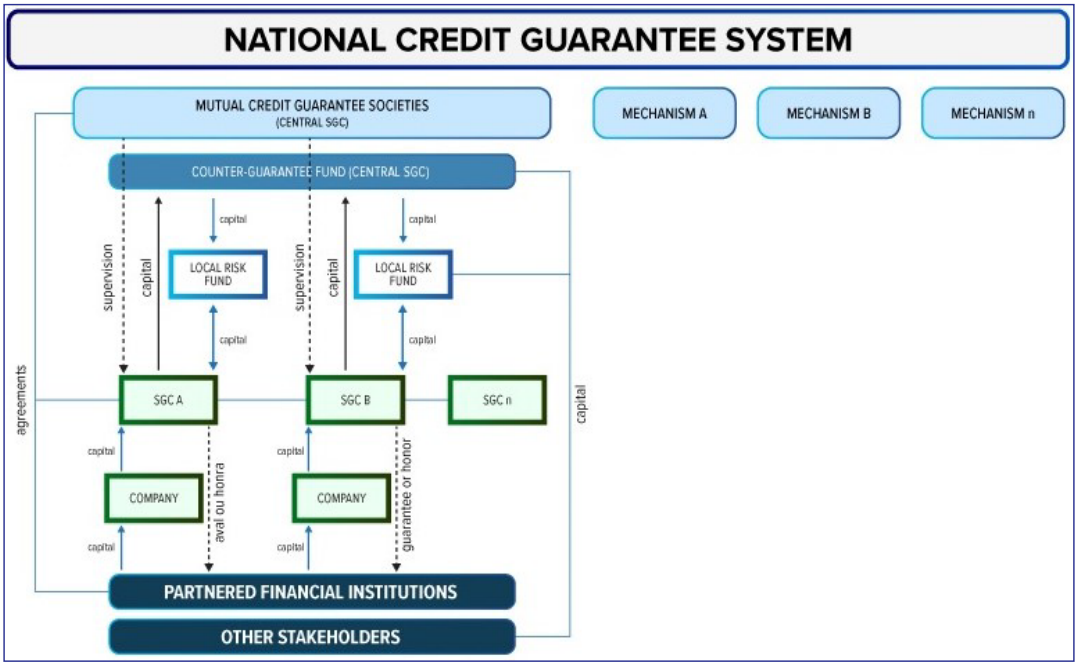
There is a legal provision for the creation of Solidarity Guarantee Societies (*Sociedades de Garantia Solidária* – SGS) since Law No. 9.841 (1999, [repealed]). Complementary Law No. 123 (2006) and its updates, especially Complementary Law No. 169 (2019), established the National Credit Guarantee System (*Sistema Nacional de Garantias de Crédito* – SNGC) and reintroduced SGS as new entities for counter-guarantee purposes. However, operational instructions are still pending. In 2020 and 2021, Decree No. 4.822 (2020) by the National Monetary Council (*Conselho Monetário Nacional* – CMN) and Decree No. 10.780 (2021) by the Presidency of the Republic provided details on the operation and obligations of SGS, including risk levels, operational limits, control procedures, and minimum capital requirements for incorporation. These regulations are specific to SGS, which are for-profit corporations. In contrast, SGCs are associations with non-economic purposes.

Despite the detailed regulatory framework focused on SGS, SGCs have received comparatively more detailed regulations, enabling better organization and management.

General overview of the mutual guarantee mechanism in Brazil

The functioning of the guarantors is shown in Figure 3. It can be seen that the SNGC is supervised by the CMN and consists of multiple 'n' guarantee mechanisms. One of these mechanisms is made up of SGCs, which can operate independently of a counter-guarantee fund.

Figure 3
Mutual guarantors at SNGC



Source: Adapted from Zica and Martins (2008).

In the Brazilian case, among the sixteen existing SGCs, twelve are linked to the Central SGC counter-guarantee fund, which functions as reinsurance or a counter-guarantee for each of the local risk funds (LRFs) of the associated SGCs. These LRFs serve as the first line of guarantee for loans granted to companies associated with SGCs by partner financial institutions (FI).

There may be a combination between the counter-guarantee fund and the LRFs of a guarantor to reach the maximum guarantee percentage (80%). According to CMN regulations (Resolution 4.822/2020), this is the maximum percentage that can be provided as a guarantee, with 20% of the risk always remaining with the partner FI. This does not mean that the bank cannot assume more than a fifth of the risk.

According to Central SGC (2023), the degree of leverage for an SGC Local Risk Fund is generally 10. This means that if there is R$10 million available in an LRFs, it can back up to R$125 million in guarantees (considering the limit of 80% of the value of each financing).

The Central's counter-guarantee fund and LRFs can be formed by private and public capital, sourced from members of the SGCs, the associated SGCs themselves, and private and public stakeholders, as outlined in the statutes of all SGCs linked to the Central.

In December 2022, there were sixteen 'singular' SGCs in Brazil, according to the Central SGC (2023), as listed in Chart 1.

Chart 1
Credit Guarantee Societies in Brazil (December 2022)

Guarantor	City/state headquarters	Year of foundation
RS Garanti (GarantiSerra)	Caxias/RS	2003
Noroeste Garantias	Maringá/PR	2011
GarantiOeste	Toledo/PR	2011
GaratiSudoeste	Francisco Beltrão/PR	2011
Garantia dos Vales	Governador Valadares/MG	2012
GarantiParanaíba	Patos de Minas/MG	2012
GarantiParaíba	Campina Grande/PB	2014
SGC Centro Sul	Guarapuava/PR	2014
GarantiNorte	Londrina/PR	2014
GarantiGoiás	Goiás/GO	2015
GarantiSul	Curitiba/PR	2015
GaranteOeste	Chapecó/SC	2015
AGCP	Americana/SP	2016
GaranteNorte	São Bento do Sul/SC	2018
SGC Amazônia	Belém/PA	2019
Rondon Garante	Porto Velho/RO	2021

Source: Central SGC (2023).

In Chart 1, four guarantors are highlighted in gray to indicate SGCs not associated with the Central SGC. In 2020, the National Association of Credit Guarantors was created in Governador Valadares (Minas Gerais – MG) as a spontaneous movement of guarantors not linked to Central SGC. As of March 2023, there had been no significant progress in materializing the activities of this association beyond its initial constitution and launch.

Almost 20 years have passed since the creation of the first Brazilian SGC, and it cannot be said that this activity is still recent in Brazil. However, there is some doubt about the institutional maturity of the guarantors, given the minimal state regulation and the number of operations carried out compared to the number of small businesses in the SGC regions. Based on the analysis of the Central SGC reports (2023), at the end of 2022, there were approximately R$80 million in risk funds available for micro and small enterprises (MSEs) — within the affiliated SGCs. This amount translates to nearly R$1 billion in guarantees available to be taken by SGC members. Certainly, this amount, even if distributed across the guarantors' territories, has a positive impact on the communities, generating jobs and income, and operating through an eminently community mechanism composed of individuals from the region.

Local functioning of the mutual guarantee mechanism

The clients of the SGCs include individual micro-entrepreneurs (*microempresários individuais* – MEI), MSEs, and small rural producers, who pay to use the services of the SGCs. Some of these guarantors charge an association fee (averaged R$ 150.00 until 2022). Additionally, all SGCs charge a letter of guarantee fee (LGF), which is a percentage of the value of the installments to be paid to the FI (Central SGC, 2023). In 2022, the SGCs linked to the central charged between 0.16 to 0.25% of the value of each installment (Central SGC, 2023).

The collection of these fees funds the operation of SGCs, which can also receive assistance from other stakeholders for administrative expenses and/or the formation of LRFs. Trade associations (TA) also collaborate by providing labor, facilities, equipment, and capital, recognizing the importance of the guarantee fund for their members and the region (Central SGC, 2020).

According to Central SGC (2023), the commercial partners of Brazilian guarantors include cooperative banks, development banks, and public and private FI. However, large banks still do not accept the letter of guarantee from SGCs as collateral for their financing.

By observing the reports of each SGC, it can be stated that their performance is closely linked to the dynamics of the partner FIs and the TA that established them. The approach to customers occurs in three ways:

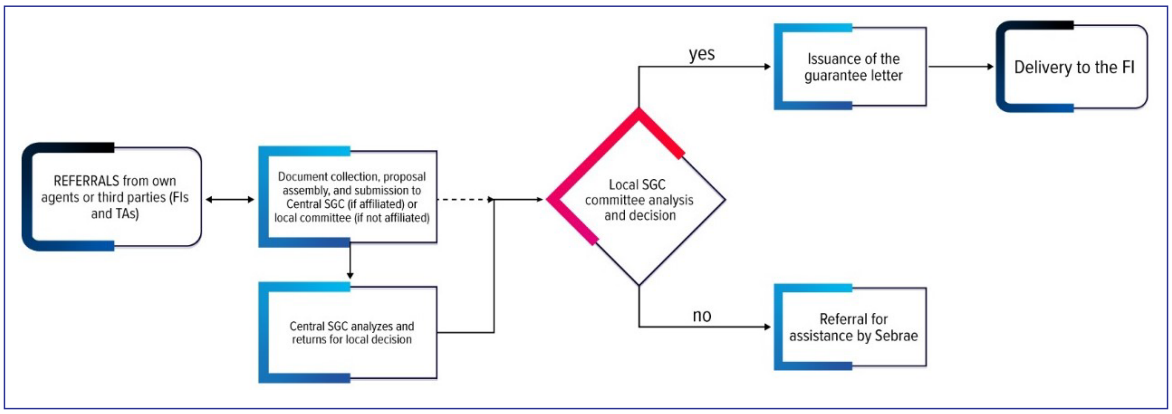
a) actively, using its employees for service sales (credit agents).

b) passively, through TA: many of them maintain credit agents on their staff, who sell the SGC product as a benefit to the associate. It is important to note the territorial reach of each TA, which is compensated for this action (part of what the guarantor charges).

c) passively, through FI and other partners: if the client needs additional guarantees for financing, the guarantor's service is offered, enabling reach and regionalism due to the number of credit union branches and other agents. The partnering FI is not compensated.

The SGC work process is summarized in Figure 4.

Figure 4
Search/offer process and granting of credit guarantee in SGC



Source: Elaborated by the authors.

Proposals originate from their own agents or from third parties who provide documents and present the client's needs to compile the proposal (preliminary analysis). Subsequently, the proposal can take one of two paths.

SGC affiliated with the central: the proposal is forwarded to the central, which conducts the initial documentary and credit analysis of the applicant. It is then returned to the originating SGC, carrying the preliminary verification and analysis information from the Central SGC. The local credit analysis committee approves or denies the guarantee in the final instance. If approved, a letter of guarantee is issued (valid for 30 days). If the request is denied, the process is referred to Sebrae for business assistance.

Non-affiliated SGC: the proposal goes directly to the local committee, which conducts the credit analysis and makes the decision. If approved, the guarantee letter is issued (valid for 30 days). If the request is denied, Sebrae is informed.

If the customer defaults for 30 days or more, the FI will request 'honor' (payment) from the SGC for the total guaranteed amount, as stipulated in the agreement between the SGC and the FI. The SGC issuing the guarantee letter must pay this amount, which includes specified payment conditions, deadlines, percentages, and maximum guaranteed amounts. For instance: if a MSE pays five out of ten installments and defaults for 30 days; and if the financing amount was R$ 100,000 with 80% collateral from the SGC, the SGC will need to pay R$ 30,000 to the FI to fulfill the 80% guarantee (covering the 50% already paid by the company and the remaining amount the SGC is responsible for). Following the 'honor' transaction, the SGC will recover the R$ 30,000 from the debtor company to replenish its LRFs.

Brazilian guarantors, as noted by the World Bank (2020), operate with a safety margin of 7% when using LRF (stop loss). When the total value of 'honors' reaches 7% of the total value of the LRF, the guarantor cannot initiate new operations supported by that LRF. Operations can resume only after the honored values return to the LRF, restoring the 7% threshold and enabling new operations.

Relationship between Central SGC and other SGCs

The 'Central' serves as a sort of "secondary layer" or counter-guarantee for individual organizations, akin to how SGCs relate to the cooperative credit system or the SGS outlined in Decree No. 10.780 (2021).

'Single' SGCs seek membership with the Central SGC, which entails adhering to a defined set of standards, responsibilities, and financial obligations. Affiliated SGCs must adhere to the Central's guidelines concerning credit analysis, accounting practices, transparency in operations, and other governance-related procedures. Besides aiming to standardize and enforce compliance, the Central also conducts audits of 'single' SGCs.

Becoming a member of the Central SGC incurs financial costs related to governance. In exchange, Central SGC provides services such as credit consultations, billing services, information systems, and others at reduced rates compared to what individual SGCs would incur, thus offering financial advantages.

Another benefit is the enhanced reliability (which signifies a higher quality of social capital[1]) among members. This reliability stems from the supervision of SGCs affiliated with the Central and their access to reinsurance in operations. Consequently, there is a perceived higher quality guarantee from an SGC affiliated with the Central compared to a non-affiliated one. Affiliated operations also undergo triple credit analysis: conducted by the Central, the local committee, and the FI.

From the reports, especially over the four years of the sample, it is evident that the establishment of Central SGC (since 2019) has enhanced the standardization of processes and optimized system resources through centralized service offerings. This initiative has also bolstered the reputation of the guarantee system. Evidence of this includes public resources deposited into LRFs, such as the government of Paraná's deposit (R$ 10 million into Central SGC's risk fund), by the City Hall of Curitiba (R$ 10 million into SGC Garantisul), and similar contributions from other municipalities.

Brazilian SGCs and their European Siblings

The history of Brazilian SGCs parallels that of European counterparts, where the legal framework was solidified toward the end of the 20th century, often after a span of about 60 years in some instances.

In Brazil, nearly 20 years after the establishment of laws creating the SNGC and receiving financial contributions from governments, there remains a gap in effective governmental recognition of the importance of polycentrism, as argued by Polanyi (1951) and V. Ostrom (2009).

In the case of European SGCs, governmental recognition materialized through the provision of resources for reinsurance, establishment of standards that supported self-organization while preserving local attributes, and fostering cooperation, trust, and reciprocity. According to Gai, Arcuri, and Ielasi (2023), significant growth in operations and values occurred only after this recognition, supported by both governmental and European Central Bank acknowledgment. Ostrom (1990) asserts that community management of common resources can achieve high quality **but emphasizes the necessary role of the State.** Additionally, Gai et al. (2023) highlight that the new generation of European standards prioritizes sustainability, providing favorable conditions for companies aligned with Environmental, Social, and Governance (ESG) principles to access credit, serving as a noteworthy example.

This brief analysis underscores the necessity for increased federal-level State involvement to unlock and multiply the capacity of Brazilian SGCs, akin to the growth seen in Europe and other continents. Furthermore, it suggests that Brazilian SGCs should prioritize ESG considerations. Drawing from historical insights, this evolution should be pursued through collaborative planning between SGCs and governmental bodies.

[1] The concept addressed is similar to that of Bourdieu (1998, p. 67): "[...] a set of current or potential resources that are linked to the possession of a durable network of more or less institutionalized relationships of acquaintance and recognition, or in other terms, to belonging to a group as a set of agents who not only possess common properties [...], but are also united by permanent and useful connections;" and Putnam (1993), in presenting the term "civic community."

Application of the IAD framework to Brazilian credit guarantors

If SGCs are to be considered common goods, applying the IAD Framework could provide valuable insights into their management and governance dynamics.

If each guarantor operates under similar biophysical conditions, hierarchical positions, information, and controls, yet varies in actors and territories, this variability characterizes distinct arenas of action, community attributes, and rules in use for each SGC.

The analysis was guided by the description contained in Figure 2, to define some concepts and their application during the process, as outlined below.

a) Inputs or external variables:

a1) physical world attributes: Common goods represent the capital of the LRFs and the credit conditions of each member. Thus, there is a condition for the inclusion or exclusion of small businesses from users: **favorable credit registration.** In this case, only those who have this condition can access the SGC guarantee, regardless of whether the LRF resource is public or private. Also, each LRF can define (by rule) whether guarantees are directed toward any sector or territory. The subtractability of the LRF is easy for those with SGC-guaranteed financing, much like with most common resources, as per Ostrom (2010). Since there is a maximum value for the guarantee (80%), individual withdrawal is limited and quantified.

a2) cultural attributes of the community: The social and cultural context aspects of the guarantors are linked to the size of the groups (number of members in each SGC), the reputation of their members (especially leaders) and other stakeholders, homogeneity, reciprocity, and commitment to payment to avoid compromising the LRF. The number of members is influenced by the free rider problem and transaction costs. According to Coase (1960), smaller groups are more likely to have intangibles such as reciprocity, trust, etc., in transaction costs, which tends to deter free riders. Group size also relates to territoriality and territory, where people with similar characteristics and values are found (Albalgli, 2004). This leads to the understanding that, although there is some homogeneity among the associated public, at the territorial level, this may be more or less pronounced. The establishment of the Central SGC is closely linked to trust, as it reinforces network identity and increases the security of the guarantee system (for both borrowers and FIs), representing reinsurance and guiding and overseeing the procedures of its affiliates. However, it is essential to ensure that the transaction costs incurred at the Central do not outweigh the benefits it provides.

a3) rules: The social statute defines who can become a member of the SGC. In individual entities, individuals or legal entities can be members (rural producers, individual entrepreneurs, micro or small businesses, or representative entities or promoters of MSEs). However, there are restrictions on how members can use the LRF, as they must meet the requirements described in a1. The statutes outline classes of members, typically divided into contributors or beneficiaries, founders, and maintainers, each with their own characteristics, duties, and rights. The statute specifies a geographical limit for the SGC's operations, mentioning regions and, in some documents, the cities served. It establishes the organization's functioning, listing positions and functions, how members can be elected and vote, and penalties for non-compliance with the rules. The statutes of SGCs conform to what Ostrom (2005) and McGinnis (2011) propose for operational rules, as they encompass the elements they point out. However, within the microcosm of each guarantor, shared information on various subjects such as financing or guarantee limits, use of LRFs, criteria for financing proposals analysis, etc., is not easily found. The manual for proposal analysis is not disseminated among members but restricted to the analysis committees themselves, despite no rule guiding this restriction. According to Ostrom's principles (2005), this lack of shared information may weaken cooperation, as there is limited sharing regarding mandatory, permitted, and prohibited actions.

b) Action Arena:

b1) action situation: This is the social locus where the various actors of the SGC meet to create or modify, comply with or breach, and observe norms, make management decisions regarding the organization's day-to-day operations, and perceive the results of their work. It occurs in both physical and virtual spheres, within each individual SGC and the Central. Most of their work and decisions are recorded in systems such as the Galileo Network, which is used to receive, analyze, and record credit guarantee proposals, issue guarantee letters, etc. This system is shared among the affiliated SGCs and the Central, which monitors the operations of its affiliates. Despite the similarities in action situations, each SGC's action arena is unique due to the specific territory and its actors, interactions, and processes of institutionalizing norms, all of which are related to the community's attributes. The Central SGC, by centralizing services, can influence the action situation of

each SGC, particularly concerning formal rules and procedures, generation and availability of minimum information, and the costs and benefits of decisions. The Central SGC must exercise careful diligence to avoid creating a tendency toward standardizing decisions or limiting or inhibiting the community's attributes in each action situation. This preserves the autonomy and identity of each guarantor, its members, and its territory. In the action situation, prominent actors include leaders and representatives of the founding associations on the SGCs' boards of directors. These individuals are typically chosen either by election (members who run for leadership roles within the SGC) or by appointment (to represent the founding ACE on the board of directors, which elects the leaders).

b2) Actors or participants: These include members, leaders, and employees of the individual and Central SGCs, as well as representatives and observers from stakeholders and regulators. Specifically, this group encompasses business owners of the member firms, heads of organizations representing these businesses (such as TA and its federations founding the SGCs), leaders of organizations supporting the business and associative movement (credit cooperatives, development banks, etc.), and, occasionally, representatives of supranational entities (such as the World Bank and others). According to the SGCs' statutes, general assemblies allow participation from all members, regardless of category. Typically, the boards of directors consist of five to thirteen leaders, fiscal councils of three to five members, and executive boards or management teams of one to three individuals for each SGC. These actors are assigned hierarchical positions and are the main decision-makers in the action arena. They play key roles in generating and using information for controlling and understanding situations, results, costs, and benefits.

c) Outputs:

c1) evaluation criteria: Both formal and informal norms and the attributes of the community influence the evaluation criteria and are also related to interaction patterns. Changes in norms and attributes can trigger new criteria and/or patterns, just as shifts in the perception of costs or benefits can alter the criteria. The quality of information available to members and decision-makers is crucial, as is the strength of cultural issues and group activities, since decisions are first made at the individual level and then at the organizational level. Within the SGC, there are identifiable subgroups: board members (strategic vision), executives (internal operations), credit agents (customer interaction), and credit analysts (removed from members and management). This configuration can lead to the creation of evaluation criteria specific to each subgroup, which may not always align with the strategic goals.

c2) interaction patterns: Through decision-making practices, SGCs and their actors establish interaction patterns among their members and processes. These patterns are the result of collective action. Communication helps to recognize, propagate, support, or challenge these patterns. Interactions occur at all levels, potentially creating sub-patterns, decision-making microcosms, or even a subset of values. Therefore, it is essential to monitor and align values and information with the rest of the organization to ensure collective interest. The subgroup of credit agents warrants attention, as they are commissioned on sales, which can create conflicts of interest with the organization and/or the subgroup of credit analysts. This issue also applies to managers of partner FI. Identifying and monitoring interaction patterns, including decisions, can be done using digital and statistical methods, as suggested by Ribas (2020).

c3) results and benefits: These consist of the norms or rules resulting from interactions, as well as the more impactful influences on the cultural attributes of the community (either reinforcing or changing them). They can alter the characteristics of subtractability and user exclusion from the common good. From the perspective of the members and stakeholders, the results should certainly keep the LRF healthy (honors below 7%), preserved, and even growing. From the member's perspective, they want access to guarantees that are valid with as many FI as possible to increase their bargaining power. However, this alone is not enough. Beyond efficacy, to ensure the creation or maintenance of trust between parties, as per Ostrom (1990), other elements are necessary:

- Efficiency – a specific understanding by the actors of how the SGC operates.
- Transparency – clarifies the shared financial values (of all types), how they are managed, and which decisions are made and why.
- Equity – ensures that all eligible members have access to the guarantee.
- Community Values – observation of the shared thoughts and actions among members.
- Sustainability – maintenance and growth of the LRF itself, along with understanding the types of businesses that receive the resources and the effects of their use on other areas within the SGC's territory.

CONCLUSION

Having achieved the research objective of applying the concepts of the IAD Framework to Brazilian credit guarantors, it was found that this tool is suitable for studying SGCs, which have demonstrated their common good characteristics. Moreover, the framework exhibited considerable robustness, allowing for a detailed visualization of these attributes and offering deep reflections on the management and reality of these organizations.

The expansion of the horizon of SGCs linked to the Central revealed several potential improvements for guarantors, particularly in governance, transparency, accountability, and operational efficiency. Enhancing these aspects would ensure that collective management aligns better with committed social capital and gains legitimacy.

The application of the IAD Framework to Brazilian SGCs also highlighted the strong presence of the economic framework in existing controls. However, these controls are insufficient to address the externalities caused by SGCs, prompting innovative analyses of these organizations and their territories. For instance, it is crucial to continue examining the variables that influence institutional change to better manage potential changes in the action arena.

While SGCs are not entirely new in Brazil, scientific tests and studies on their management mechanisms are rare. It is anticipated that the consolidation and maturation of the Brazilian mutual credit guarantee system will soon occur, given the beneficial potential of SGCs for the community and its territory. They positively impact access to credit for MSEs and contribute to enhancing the social capital within these communities.

Lastly, it is important to emphasize that collective action dilemmas exhibit evolutionary and inherently complex aspects. Therefore, it is essential to note the limitations of this study, which focused on 12 out of 16 guarantors over a specific period, underscoring the necessity for further research that encompasses all Brazilian SGCs.

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DATA AVAILABILITY

The entire dataset supporting the results of this study was published in the article itself.

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