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*NARRATIVES OF ORGANIZATIONS IN THE BRAZILIAN INNOVATION  
SYSTEM IN HARDER TIMES: IDEAS ABOUT THE PURPOSE, ORIGIN AND  
PLAYERS OF INNOVATION<sup>1</sup>*

**NARRATIVAS DE ORGANIZAÇÕES DO SISTEMA BRASILEIRO DE  
INOVAÇÃO EM TEMPOS MAIS DUROS: IDEIAS SOBRE O PROPÓSITO, A  
ORIGEM E OS ATORES DA INOVAÇÃO**

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**ABSTRACT**

This study analyzes the narratives of organizations that make up the Brazilian Innovation System amid the country's economic crisis, exploring their ideas about the purpose of innovation, its origins, and the actors considered relevant. The National Innovation System can be defined as a set of organizations and institutions that interact with each other within the historical and evolutionary context of each national economy. It is assumed that discourses are contingent and can redefine convergences and antagonisms between agents, thereby affecting the system's integration. The study methodology involves data mining techniques collected from news websites and from the organizations themselves. The sample of organizations is made up of institutions from different institutional spheres and are characterized as collective representations that express the National Innovation System. Among the main findings, the antagonisms present in the narratives stand out, such as the idea that the purpose of innovation is related to greater competition and economic development versus the idea that the purpose of innovation involves a focus on social and sustainable development. Regarding the origins of innovation, the antagonism between organizations that advocate for strengthening domestic industry and those that prioritize the adoption of innovations through technology transfer from abroad stands out. Finally, the antagonism between the idea that entrepreneurs play a central role in innovation and the argument that collaboration among diverse actors is the best path to innovation development is noteworthy. Based on the analysis of the organizations' discourses, it is concluded that the system struggles

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to articulate narratives, which exposes the precariousness of discursive integration among the organizations addressed in the new context.

**Keywords:** national innovation system, discourse, crisis, contingency.

## RESUMO

O presente estudo analisa as narrativas de organizações que constituem o Sistema Brasileiro de Inovação em meio à situação de crise econômica enfrentada pelo País, explorando suas ideias sobre o propósito da inovação, a origem da inovação e os atores considerados relevantes. O Sistema Nacional de Inovação pode ser definido como um conjunto de organizações e instituições que atuam em interação entre si, no contexto histórico-evolutivo de cada economia nacional. Supõe-se que os discursos são contingentes, podendo redefinir aproximações e antagonismos entre agentes e, com isso, afetar a integração do sistema. A metodologia do estudo envolve a técnica de mineração de dados coletados em websites de notícias e das próprias organizações pesquisadas. A amostra de organizações é constituída por instituições de diferentes esferas institucionais e são caracterizadas como representações coletivas que expressam o Sistema Nacional de Inovação. Destacam-se, entre os principais resultados, os antagonismos presentes nas narrativas, como a ideia de que o propósito da inovação está relacionado a maior competição e desenvolvimento econômico *versus* a ideia de que o propósito da inovação envolve o foco em relação ao desenvolvimento social e sustentável. No que tange ao tópico da origem da inovação, destaca-se o antagonismo entre as organizações que defendem o fortalecimento da indústria nacional *versus* aquelas que priorizam a adoção de inovações por meio do processo de transferência tecnológica do exterior. Por fim, destaca-se o antagonismo presente entre a ideia de que o empreendedor possui um papel central na inovação *versus* o argumento de que a articulação entre diversos atores se mostra o melhor caminho para o desenvolvimento da inovação. Conclui-se, a partir da análise dos discursos das organizações, que o sistema apresenta dificuldades de articulação de narrativas, o que expõe a precariedade da integração discursiva entre as organizações abordadas face ao novo contexto.

**Palavras-chave:** sistema nacional de inovação, discurso, crise, contingência.



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## INTRODUCTION

This study examines the narratives of different Brazilian organizations about innovation in the face of an economic crisis with lasting social and political consequences. The aim is to understand the expectations, ideas, and discursive interactions of these organizations, considering their potential convergences and divergences in light of the contingencies faced by the system. The research question focuses on the following: What types of strategies are revealed in the innovation narratives of the organizations that make up the National Innovation System in the face of an economic crisis?

Different countries and their respective Innovation Systems have reacted in different ways to the crisis context, promoting different strategies by both public and private institutions and organizations, which align with the characteristics of their productive structures (Ramella, 2020). Of note is the adoption of intervention measures that range from the establishment of public policies to encourage innovation, to proposals by innovative enterprises themselves, such as the formulation of innovations based on Research & Development projects, especially among companies that are part of innovative environments, for example, incubators and technology parks.

The specialized literature emphasizes the importance of adopting medium- and long-term measures to encourage innovation in crisis situations, such as prioritizing key sectors, focusing on greater flexibility, adaptability and resilience of innovative organizations, and support through continuous financing in areas considered critical, among other points (Donatiello & Ramella, 2017; Arbix and Miranda, 2015; Sturgeon et al., 2013; Pacheco et al., 2021).

Brazil's National Innovation System is still in its infancy, but significant progress has been made throughout its development, such as the creation of innovation-focused laws and reforms in innovation-incentive institutions, such as CNPq and FINEP. Of note in the 2010s was the creation of the National



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Strategies in Science, Technology, and Innovation, aimed at formulating guidelines for ST&I in the country. Despite the implementation of these important measures, a historical deficit in the rapprochement between the various actors that make up this system is notable. Furthermore, since 2015, Brazil has faced a context of economic inflection, which significantly influenced the abandonment of efforts toward closer cooperation among the actors that make up the National Innovation System, the contraction of resources, and public expenditures for ST&I.

Therefore, this study aims to further investigate the responses of the National Innovation System by analyzing the narratives of some of its main organizations. The system's reorganization depends on the coordination between its various constituent agents, addressing axes such as what innovation is, where it originates, and who contributes to its generation, dissemination, and use. The agents of the Brazilian innovation system investigated come from the business, academic, union, and government spheres.

According to Donatiello and Ramella (2017), the National Innovation System refers to all economic, social, political, organizational, and institutional factors that influence the development, diffusion, and use of innovations, as is the case with innovation-focused organizations belonging to different institutional spheres. The sociological premise is that narratives can define perceptions of interests, leading to the adoption of intervention measures and, thus, to different reactions within the system to crises. This perspective can help to better understand the behavior of agents in the face of instability in the innovation system. Thus, it is important to understand, in situations of contingency and high uncertainty, the articulation of ideas among agents, as this should influence their actions to overcome these situations, in addition to potentially representing windows of opportunity for intervention. From this perspective, this work attempts to contribute sociologically to discussions in the field of Innovation Studies.



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The hypothesis formulated assumes that in situations of contingency, the agents that make up the system tend to enter a state of discursive conflict, given the marked instability in contexts of economic crisis, while in situations of political and economic stability, they tend to articulate consensus among narratives.

The study methodology involved a sample of organizations operating nationwide, representing different institutional spheres (business, academic, government, and union), and participating in the public debate related to innovation development. The sample of organizations consists of: FINEP (Financier of Studies and Projects), BNDES (National Bank for Economic and Social Development), EMBRAPII (Brazilian Company for Industrial Research and Innovation), ANPROTEC (National Association of Entities Promoting Innovative Enterprises), CNI (National Confederation of Industry), CNC (National Confederation of Commerce), CNA (Confederation of Agriculture and Livestock of Brazil), ANDIFES (National Association of Directors of Federal Institutions of Higher Education), SBPC (Brazilian Society for the Advancement of Science) and CUT (Central Única dos Trabalhadores).

The following analytical dimensions were addressed: a) purpose of innovation (agent's perspective on what innovation is, including their expectations regarding the objective of innovation); b) origin of innovation (agent's perspective on the sources of innovation capabilities and activities, whether they advocate the development of domestic innovations or those developed through technology transfer processes); c) actors considered relevant (perspectives on actors who are part of the system and play a central role in the development of innovation). These dimensions follow the logic of capturing organizations' ideas regarding these key points and articulating them in a discourse, considering the context of contingency.

The techniques involve the collection and exploratory analysis of documents and data contained on the respective organizations' websites, as well



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as research into news related to them. The keywords searched in web search engines were "crisis" and "innovation." This methodology, called data mining or scraping, is characterized by the exploration of patterns and relationships within a significant set of data found. The sources used are relevant because they constitute a reflection of the public debate.

## **NATIONAL INNOVATION SYSTEM AND ITS AGENTS**

Sociology has increasingly integrated itself into the field of Innovation Studies, contributing both to the debate on the profound and varied social effects of technological transformations (e.g., Castells, 1999; Arbix and Miranda, 2017) and to the unraveling of the complexity and relational nature of the innovation process (e.g., Ramella, 2020; Etzkowitz, 2009). It is worth highlighting the fact that there is an extensive tradition of studies by classical authors in the social sciences who, although they have not directly examined the topic, allow for the thematization of innovation, relating it to the social dynamics of capitalism.

The concept of innovation has been defined by international and Brazilian sociology as a process of change that introduces elements of economic novelty (Ramella, 2020), involving the collective production and implementation of novelty within a previously regulated context (Wollfenbuttel, 2021), a discontinuous transformation of the regular economic flow (Souza Junior, 2020), and a relational focus on the ability of social actors to interact with each other and build networks (Paim, 2018). This process also involves uncertainty and risk, considering that innovation is impacted by contingency factors such as economic crises, in addition to the fact that the innovative business environment is marked by radical changes and high competitiveness among the organizations and firms involved.

Ramella (2020) emphasizes that innovation studies are currently an emerging field. The author emphasizes that the field transcends disciplinary



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boundaries, encompassing diverse theoretical approaches. Among the areas that address the topic, the counterpoints, complementarities, and intersections between Economics and Economic Sociology stand out. Economics has always held a significant prominence in innovation studies. For Ramella, this situation is not due to a lack of sociological reflection, as the topic was addressed by the classics. However, it was from the 1980s onward that studies gained momentum, with a return to the work of Schumpeter, considered a key author on the topic of innovation. The innovation process becomes an object of sociological interest as its agents develop strategies and deploy resources and knowledge embedded in networks of social relations and institutionalized norms and rules. The formation of these arrangements is not sociologically trivial, even requiring the construction of representations about the forms of this joint and more or less coordinated action, as proposed to be discussed in this study.

Innovation Studies is interdisciplinary in nature, with a growing body of academic literature on the topic. Economic sociology offers analytical tools that allow for the approach to topics at the macro, meso, and micro sociological levels within the scope of economic innovation. The topic of innovation has gained increasing prominence in the fields of comparative economic policy studies and new economic sociology, considered the two main areas of economic sociology. Thus, the aim is to formulate a sociologically grounded study of the topic of innovation, more specifically, of National Innovation Systems, a dimension still little addressed within the universe of Innovation Studies.

It is worth mentioning that crisis situations, similar to those addressed in this research, tend to restrict the availability and, consequently, increase competition for resources relevant to innovation (Donatiello and Ramella, 2017), and can also destabilize policies governing innovation systems (Fagerberg, 2016). It can be assumed that such restrictions and instabilities end up requiring discursive strategies from innovative actors in order to tie together ideas and





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collective identities, potentially rearranging interests and courses of action in the system.

### *National Innovation System: theoretical contributions*

Systemic and integrated analytical perspectives, as in the case of this investigation, began to gain more prominence in innovation studies from the 1990s onwards. As Ramella (2020) points out, this occurred due to the identification of knowledge and learning as central factors for the level of competitiveness of organizations, requiring that the importance of a plurality of actors (companies, universities, governments, among others) be taken into account, as well as the role of social interactions and institutions in shaping the context in which these actors operate.

For Ramella (2020), the concept of Innovation Systems is an analytical response to a set of new economic phenomena, notably: a) incremental innovation experiences based on small and medium-sized enterprise clusters in Italian industrial districts; b) radical innovation experiences in high-tech sectors based on new scientific knowledge, such as in Silicon Valley; c) strategic partnerships and alliances in R&D; and d) a reorientation of public innovation policies linked to globalization. This set of phenomena highlighted not only the relational and institutionalized nature of the innovation process but also the importance of public policies in sustaining this process in the face of new international competition.

The concept has received significant and positive reception in both academia and public policy, guiding not only research but also innovation policy. Szapiro et al. (2021) highlight that the origin of the National Innovation System concept is linked to the formulation of innovation policies. This is explained by its significant dissemination among international organizations, such as the OECD, beginning in the mid-1980s, amid the onset of globalization.





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The concept of the National Innovation System is not consensual, with varying formulations. There are disagreements, for example, about whether the analytical focus is limited to formal R&D activities and their incentive policies or encompasses tacit knowledge and its learning modalities in routines and social interactions. Ramella (2020) states, however, that the definitions of the National Innovation System share some common assumptions, such as the fact that national economies have a significant variety of productive and cognitive specializations, which are path dependent. Another significant point is that knowledge does not circulate easily between different locations because it is incorporated by agents.

Among the assumptions, it is important to note that organizations do not act in isolation, which requires an analytical perspective that considers the central role of interactions. The last assumption assumes that the innovation process requires a holistic, interdisciplinary, and historical-evolutionary analytical approach. It is important to emphasize that such an approach sheds light on the origins and transformations of the institutional context in which innovation occurs.

The system, therefore, consists of a set of components and their relationships, as well as their activities and functions related to innovation. The components that constitute the system are organizations and institutions. Organizations are a set of actors that carry out activities and interact within the system, while institutions refer to the norms that regulate these interactions. The quality and form of relationships within the SNI are important to the innovation process. Ramella (2020) states that national companies play a relevant role in the National Innovation System, given that their strength, competence, and competitiveness influence the degree of innovation within these systems. The author highlights the strong interdependence between the economic structure and institutional context of the actors for understanding SNIs.



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### *The power of narratives*

To capture the changes, disputes, and rearrangements of interests in the innovation system, a relational sociological approach is used, attentive to the "narrative"—or discursive—strategies of organizational agents to influence the course of change. Laclau (1986) seems to offer particularly pertinent insights into his understanding of the "precariousness of the social," highlighting some aspects of this formulation, such as the plural positions of actors and their social identities, the actions of articulatory practices, and the contingent and antagonistic nature of discourses. For Laclau, discourse is considered the primary terrain on which reality is constituted, a complex of given elements derived from a set of relationships. Discourse also involves the dispute over antagonistic meanings, in which the social field is marked by a struggle to establish space.

The discursive system places elements at a given position and prevents the articulation of others, allowing the formation of different discursive practices within the same theme. The same element - for example, innovation - can become a different element/moment in one discourse than another. According to Laclau, the connection between these different elements/moments allows the formation of discourse. Laclau emphasizes that antagonistic discourse also exists in the broad social space through the struggle for hegemony. Discourse is thus constituted as an articulated totality resulting from the plural articulatory and antagonistic practice of hegemonized elements, marked by the displacement of actors within the social space.

In the specific study of the Innovation System, one should focus, as mentioned above, on investigating the narratives of agents around ideas about: a) the purpose of innovation; b) the origin of innovation; and c) the actors considered relevant to innovation. The ways in which these ideas are articulated should shape discourses and antagonisms in a strategic game for influence on the policies that encourage and regulate the innovation system.



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Reynares (2016) highlights the more recent approach of Discursive Institutionalism, which asserts the importance of discourse in explaining institutional transformations. For the author, discourse is an interactive process that involves coordination among different social actors in the development of institutional projects through the reconfiguration of collective narratives.

Thus, the contingent nature of social reality is also highlighted, in which actors bring various skills into play in a dynamic context. Skilled actors articulate discourses within coalitions and epistemic communities, highlighting their coordinating dimension in the construction of legitimacy, constituted by actors involved in proposing public policies. Disputes over arguments and meanings (conflictive dynamics) are notable, in which society is marked by multiple social antagonisms constituted through diverse interpretations and diagnoses that form epistemic communities.

## **NATIONAL INNOVATION SYSTEM: BRAZIL AND RECENT CONTINGENCIES**

The establishment of the Brazilian National Innovation System occurred considerably late, with important milestones occurring during the 1950s and 1960s, such as the creation of CAPES (Campaign for the Improvement of Higher Education Personnel), CNPq (National Research Council), FINEP (Financier of Studies and Projects), and FNDCT (National Fund for Scientific and Technological Development).

In the 1970s and 1980s, several government plans were created to support Science, Technology, and Innovation, such as the Strategic Development Program (PED) and the Basic Plan for Scientific and Technological Development (PBDCT). With the context of redemocratization from the second half of the 1980s, significant changes were made to the National Innovation System, such as the creation of the Ministry of Science and Technology (MCT)



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in 1985. With the promulgation of the Federal Constitution in 1988, with a complete chapter dedicated to the theme of Science & Technology.

The 1990s also saw important milestones, such as the institutional reforms of the CNPq and FINEP, and the strengthening of ST&I incentive programs, establishing guidelines for the establishment of a state policy. Beginning in the 2000s, more robust initiatives to encourage innovation were created, such as the creation of the Innovation Law (Law No. 10,973) in 2004, aimed at training and establishing greater autonomy and maturity in the development of technological innovations, and the Lei do Bem (Law No. 11,196), created in 2005, aimed at encouraging R&D processes among Brazilian companies.

The second half of the 2010s saw the creation of the National Strategy for Science, Technology, and Innovation (ENCTI), aimed at establishing axes considered crucial for ST&I in Brazil. The first two National Strategies for Science, Technology and Innovation have a different direction compared to the most recent Strategy, formulated in 2021. This strategy presents a context of dispersion regarding innovation-oriented measures, in addition to the lack of diversification of social actors, a characteristic of the first two. Also noteworthy is the creation of programs related to increased productivity and cost reduction, such as the Brasil Mais Program, created in 2016, and the Continuous Competitiveness Improvement Program, established in 2019. These initiatives represented significant changes in the sense that they reflected a policy of "fiscal austerity," a notable feature of the economic and political crisis that began in 2015 and intensified in 2020 with the worsening of institutional instability.

Matos and Teixeira (2019) emphasize that the Brazilian system is inefficient compared to countries with mature innovation systems. They note that organizations' involvement in R&D activities remains significantly low. This is



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crucial to characterize the lack of a mature innovation system, considering that innovative companies play a significant role within it.

Miranda and Arbix (2017) point to a significant institutional deficit regarding the country's productive structure, which worsens during times of economic stagnation and depression. The authors emphasize that it is necessary to invest in the creation of medium and long-term measures and policies, taking into account that for effective changes to be implemented and a better future perspective to be built, an institutional context aimed at greater stability is of utmost importance, with a focus on key points of advancement in scientific and technological production and with continued investment of resources in areas considered critical for the development of an economy focused on innovation, thus aiming to reverse Brazil's low economic performance.

It should be noted that during the period from 2015 to 2019, the variation in the average annual GDP growth rate in Brazil contracted by 0.46% (Ruduit-Garcia, 2021). In 2020, the drop was 4.1%, marking the deepening of the crisis situation in the country, with the advent of the Covid-19 pandemic (IBGE News Agency, 2021). Historically, economic recessionary cycles in Brazil are followed by a disruption in innovative and scientific activities, with a decline in investment more than proportional to the decline in income (De Negri, 2020).

It is worth mentioning a notable lag and redirection of multinationals investing in R&D in the country, prioritizing the focus of their activities at headquarters. As previously highlighted, the largest Brazilian companies and those considered most innovative concentrate on low-technology sectors, resulting in a considerably lower level of R&D investment. This scenario of low capacity to reinforce investments in higher value-added areas gained greater prominence in the context of the economic crisis driven by the COVID-19 pandemic. Brazilian companies listed among the 2,500 highest R&D investors in the world invested 1.3% of their net revenue in R&D in 2016, below all other



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economies; in 2019, this effort fell to 0.77% (De Negri and Koeller, 2020). Furthermore, regarding the establishment of policies aimed at Science & Technology, the excellent scientific expertise found in Brazil has not been properly activated and encouraged, even in the context of facing the pandemic.

It is noteworthy that the country has not designed a long-term strategy to address the crisis (De Negri and Koeller, 2020). Based on the information presented, it is important to mention that Brazil has historically experienced poor coordination between various institutional spheres, particularly those of the productive and academic sectors. This institutional deficit is reflected in the way Brazil reacts to crises, demonstrating a severe lack of direction in formulating public policies aimed at encouraging innovation, in addition to a scenario of low investment from both the public and private sectors.

## **NARRATIVES OF SNI ORGANIZATIONS**

As previously proposed, it is worth examining the ideas articulated in the discourse and positions of relevant system agents in situations of crisis in the country.

### *Purpose of innovation*

Regarding organizations' perspectives on the purpose of innovation, they mention the importance of innovation for competitiveness, as a significant differentiator for production efficiency, the generation of new products, increased skilled employment, and economic growth, as is the case with BNDES and ANDIFES. Competition is considered an important factor, given the current context of an increasingly complex and globalized economy, as can be seen in the following excerpt:

In times of crisis, we must understand that we need to increase investment in science and technology to generate competitive advantages and enable Brazil to compete globally. (ANDIFES, 2021)



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Other organizations, such as ANPROTEC, emphasize the importance of investing in innovation in Brazil's approach to the Knowledge Society. The concepts of the Knowledge Society and Innovation are strongly intertwined, highlighting the power of knowledge as a driver for countries' economic and social development. Organizations such as EMBRAPA, ANPROTEC, and CNI generally emphasize the role of innovation in economic recovery in times of economic crisis, emphasizing the importance of establishing legal frameworks to further boost investment in innovation. This point is also emphasized in the literature, where innovation is a relevant tool in exploring new market opportunities and boosting economic growth, fostering greater competitiveness through significant investments in Research & Development and an efficient institutional framework, as Miranda and Arbix (2017) point out.

Organizations such as BNDES, CNI, and ANDIFES also emphasize the importance of public policies focused on long-term innovation and that coordinate the initiatives of the different institutional spheres involved in innovation. Other organizations, such as SBPC, reinforce the importance of resources allocated to Science, Technology, and Innovation for promoting sustainable development and reducing social inequalities. CUT, following the same line, emphasizes that innovation plays a crucial role in establishing an economic and social development project aimed at improving the quality of life and income distribution of the Brazilian population. The organization also advocates for the relevance of the various institutions supporting the National Innovation System, such as CNPq and CAPES, in promoting significant investments in Science, Technology, and Innovation, despite periods of fluctuation. The creation of these institutions was an important milestone in the formation of Brazil's National Innovation System, as Matos and Teixeira (2019) point out.





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Generally speaking, the purpose of innovation among organizations falls into two groups: those that emphasize its role in increasing competitiveness among companies, emphasizing their economic potential, and those that prioritize innovation's role in promoting social and sustainable development. Both perspectives consider the importance of long-term investments and the establishment of institutional frameworks aimed at generating and driving innovation. This categorization can be seen in Chart 1.

**Chart 1 – Innovation Purpose**

Innovation Purpose	
Competitiveness	BNDES, ANDIFES, CNA
Reducing inequalities and sustainable development	FINEP, SBPC, BNDES, CUT

Source: Elaborated by author

### *Innovation origin*

Regarding the origins of innovation, some organizations prioritize the development of domestic innovations, while others emphasize the importance of imitating foreign technologies to boost the economy. Both demands require a strengthened and coordinated National Innovation System.

Organizations such as FINEP, BNDES, CNI, and ANDIFES highlight Brazil's unfavorable position on the international stage. The importance of investment in innovation among less developed countries is evident. Despite possessing the same instruments as developed countries, Brazil still lags behind technologically, which is even more pronounced in contexts of economic crisis. EMBRAPPI also highlights the emergence of a post-COVID-19 scenario that prioritizes the establishment of a highly innovative society, activating a production chain focused on meeting local needs. This seeks to reduce dependence on imported technological components, strengthening the competitiveness of Brazilian industry.



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Actors from some organizations, such as the CNI, point out that during the pandemic, countries that lacked the necessary technological resources were more severely impacted due to their strong dependence on other countries. The import of high-value-added products and the export of commodities are a hallmark of the Brazilian economy, highlighting a significant shift toward primary economic activity. Organizations such as the CUT advocate for the reorganization and strengthening of national industry through government support through increased investment in innovation, as can be seen in the following excerpt:

Brazil is undergoing a process of deindustrialization, where we have increasingly imported high-value-added products and exported commodities, which points to a re-primarization of our agenda. We advocate for the reorganization and strengthening of national industry, and to this end, in addition to government support, investment in innovation is essential. (CUT, [undated])

CNA emphasizes the importance of using technology in agribusiness, emphasizing the government's role in connectivity and supporting partnerships with countries considered more advanced, such as the United States.

In summary, the organizations advocate, on the one hand, prioritizing skills and knowledge originating from within the country, advocating for the strengthening of national industry through innovations that develop local capabilities, while others value the development of innovations through technology transfer processes. This categorization can be seen in Chart 2.

**Chart 2 – Innovation Origin**

Innovation Origin	
National innovation	FINEP, BNDES, EMBRAPA, CNI, ANDIFES, CUT
Foreign Technologies	CNA

Source: Elaborated by author



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### *Actors considered relevant*

Regarding the actors considered relevant, it is noteworthy that some organizations advocate the central role of the individual entrepreneur, while others prioritize the role of cooperation between different social actors, including the government and universities. Most organizations advocate for an aligned focus between the different sectors that make up the various institutional spheres.

Some organizations, such as FINEP, BNDES, CNI, CNA, SBPC, and CUT, identify the government as a key actor in leveraging scientific and technological projects through investments and the promotion of knowledge as a focus of public policies. Within this process, some organizations, such as FINEP, CNC, and ANPROTEC, advocate the importance of entrepreneurs, in the sense of transforming their concerns into innovative ideas, in addition to their ability to present and identify relevant alternatives in times of economic crisis.

It is noteworthy that most organizations defend their coordinating role within the National Innovation System, such as FINEP and EMBRAPII, which aims to establish points of contact between actors and environments focused on technology and innovation.

Some organizations advocate a complementary role in relation to the other organizations that make up the National Innovation System, such as BNDES. The organization also proposes greater private sector leadership in innovation-related efforts, such as investments in Research & Development. Some organizations, such as FINEP, BNDES, and EMBRAPII, emphasize the importance of establishing partnerships to promote joint initiatives, aiming for the further development of the National Innovation System and the country, especially in times of crisis, aiming to establish efficient actions through cooperation, as can be seen in the following excerpt:

The solutions needed to address the emergency situation presuppose the exchange of experiences, coordination, cooperation, negotiation and establishment of strategic partnerships, understanding of the



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interests involved, coordination among different organizations, and the pursuit of national autonomy, where S,T&I activities assume a relevant and strategic role. (FINEP, [undated])

Generally speaking, organizations advocate, on the one hand, the leadership of entrepreneurs and the private sector in promoting innovation, while some emphasize the government's role in formulating incentives and laws geared toward innovation. A significant portion of the organizations advocate for the collaboration of social actors from different institutional spheres, as well as partnerships between the organizations that make up the National Innovation System. This categorization can be seen in Chart 3.

**Chart 3 - Actors considered relevant**

Actors considered relevant	
Individual entrepreneur	FINEP, ANPROTEC, CNC
Articulation among different institutional actors	FINEP e EMBRAPPI
Government	FINEP, BNDES, CNI, CNA, SBPC, ANDIFES e CUT

Source: Ellaborated by author

Taken together, the data on the narratives of the organizations investigated reveal that many of the organizations share complementary perspectives, considering the dimensions proposed in the study. However, it is possible to observe discursive conflicts surrounding specific topics, creating an ambiguity in perspectives.

Regarding the purpose of innovation, it is identified that some organizations advocate that innovation should be geared towards competitiveness, while others prioritize a focus on social and sustainable development. However, these results do not negate the fact that some organizations, as is the case with FINEP, identify themselves on the spectrum between the two perspectives. There is also consensus regarding the role of knowledge in promoting innovation.



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Regarding the origins of innovation, the main conflict lies in the defense of the production of domestic innovations versus the promotion of foreign innovations. Within the articulation of these two discourses, the importance of investment in innovation stands out, both through the private sector, based on foreign innovations and through technology transfer processes, and through the government sector, through the establishment of legal instruments that encourage companies to invest in R&D, aiming to effectively boost innovation in the country.

Regarding the actors considered relevant, the discursive struggle involves organizations that prioritize entrepreneurial leadership, while some emphasize the importance of connecting actors from different institutional spheres. A significant portion of the organizations also emphasize the establishment of strategic partnerships between organizations within the National Innovation System itself.

As Laclau highlights in his constructs, it is possible to identify that in contexts of crisis (contingencies) social agents - which in this case are the SNI organizations - move with the aim of positioning themselves in the face of instabilities, sometimes joining other organizations, sometimes entering into discursive struggles with the objective of constituting a hegemonic narrative within the dichotomy driven by the political struggle, articulating different demands and identities within the discursive field.



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## **FINAL CONSIDERATIONS**

This research centrally investigates the discourses of organizations within the National Innovation System (NIS) in times of crisis, considering the three dimensions addressed, from the perspective of Laclau's discourse theory.

The analysis presents points that contribute to public debate by highlighting the narratives of organizational actors facing a context of contingency. It seeks to understand the movements and positions of actors within the system, examining how they represent the system, and focusing on what organizations have in common and what sets them apart in this scenario. The construct, therefore, aimed to formulate a diagnosis of the system's future by providing a detailed parameter regarding the discursive representations of its constituent organizations.

The study points to a deepening lack of coordination among the system's agents. Some contradictions are evident in the discourses, such as FINEP, which simultaneously advocates the role of the entrepreneur and various agents in the development of innovation, highlighting a context of heterogeneity within a single organization. This position suggests a connection with the fact that the organization is one of the largest institutions promoting innovation in Brazil, which is consistent with the development of a broader discourse compared to the other organizations that make up the system.

Also noteworthy is the emergence of discordant discourses among organizations that are part of the same institutional sphere, such as the SBPC, which advocates a more focused vision regarding Science & Technology, and ANDIFES, which emphasizes the importance of direct government investment in innovation. Discursive differences are also highlighted between the CNI, which advocates economic development based on national innovation, and the CNA, which proposes development through the process of technology transfer and strategic articulation with other countries.



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Following Ramella's (2020) assumptions, the Brazilian National Innovation System possesses a significant variety of productive and cognitive specializations, and interactions between agents play a central role. Regarding the analytical approach, it is noteworthy that it takes a holistic and historical-evolutionary view, taking into account the origins and transformations of the institutional context in which innovations occur.

Regarding the use of Laclau's discourse theory, it is argued that the study achieves its objective by proposing an analysis that takes into account a relational sociological approach, highlighting the plural positions of the actors that constitute the system and their social identities, seeking to understand their respective articulatory practices and shedding light on the contingent and antagonistic nature of the discourses presented. Thus, it grasps the "precariousness of the social" that involves the narrative struggles of the actors who position themselves in the discursive field in the face of instability, bringing alternative perspectives and meanings regarding social reality. Therefore, from the arrangements presented, it is possible to capture significant articulatory movements and, concomitantly, discursive struggles in the Brazilian National Innovation System.





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