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Article

Fund-to-fund transfers: federative coordination and cooperation in public security in Brazil

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This article aims to analyze whether fund-to-fund transfers have contributed to federal coordination and cooperation of policies aimed at public security in Brazil. To this end, the work was divided into three stages: (i) Survey of National Public Security Fund amounts allocated to the states and the Federal District in the period from 2000 to 2022, before and after the adoption of fund-to-fund transfers; (ii) Conducting semi-structured interviews to raise the perceptions of managers responsible for preparing and coordinating the decentralization process and monitoring the execution of decentralized resources; and (iii) Analysis of the Coordination/Cooperation mechanisms foreseen in the Application Plans prepared by the states in the period. The research findings confirm the results of previous studies on the induction power of fund-to-fund transfers in the cooperation and coordination of national policies for public security. It was verified that the expansion of resources and the obligatoriness of their sharing with the states favored the alignment of state policies with the guidelines established by the Union but that the interaction between bodies, organizations, and members of society on the subject is still incipient.

Keywords: federalism; coordination; cooperation; fund-to-fund transfers; SUSP.

Transferências fundo a fundo: coordenação e cooperação federativa na segurança pública do Brasil

O objetivo deste artigo é analisar a realização de transferências fundo a fundo e avaliar se ela tem contribuído para a coordenação e cooperação federativa de políticas voltadas à segurança pública no Brasil. Para tanto, o trabalho foi dividido em três etapas: (i) levantamento dos valores do Fundo Nacional de Segurança Pública (FNSP), destinados aos estados e ao Distrito Federal, no período de 2000 a 2022, antes e depois da adoção das transferências fundo a fundo; (ii) realização de entrevistas semiestruturadas para levantar as percepções dos gestores responsáveis pela elaboração e coordenação do processo de descentralização e pelo acompanhamento da execução dos recursos descentralizados; e (iii) análise dos mecanismos de coordenação/cooperação previstos nos planos de aplicação elaborados pelos estados no período supracitado. Os achados da pesquisa confirmam resultados de estudos anteriores sobre o poder de indução das transferências fundo a fundo na cooperação e coordenação de políticas nacionais, também para a área de segurança pública. Verificou-se que a ampliação de recursos e a obrigatoriedade de seu compartilhamento com os estados favoreceram o alinhamento das políticas estaduais às diretrizes estabelecidas pela União, mas que ainda é incipiente a interação entre os órgãos, organizações e membros da sociedade em relação ao tema.

Palavras-chave: federalismo; coordenação; cooperação; transferências fundo a fundo; Sistema Único de Segurança Pública (SUSP).

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Transferencias fondo a fondo: coordinación y cooperación federativa en seguridad pública en Brasil

El objetivo de este artículo es analizar si las transferencias de fondo a fondo han contribuido a la coordinación y cooperación federal de las políticas dirigidas a la seguridad pública en Brasil. Para ello, el trabajo se dividió en tres etapas: (i) Relevamiento de los montos del Fondo Nacional de Seguridad Pública asignados a los estados y al Distrito Federal en el período 2000-2022, antes y después de la adopción de las transferencias fondo a fondo; (ii) Realización de entrevistas semiestructuradas para conocer la percepción de los gerentes responsables de preparar y coordinar el proceso de descentralización y monitorear la ejecución de los recursos descentralizados; y (iii) Análisis de los mecanismos de coordinación/cooperación previstos en los planes de aplicación elaborados por los estados en el período. Los hallazgos de la investigación confirman los resultados de estudios previos sobre el poder de inducción de las transferencias fondo a fondo en la cooperación y coordinación de políticas nacionales también para el área de seguridad pública. Se verificó que la ampliación de los recursos y la obligatoriedad de compartirlos con los estados favorecieron el alineamiento de las políticas estatales con las directrices establecidas por el Gobierno federal, pero que la interacción entre organismos, organizaciones y miembros de la sociedad sobre el tema es aún incipiente.

Palabras clave: federalismo; coordinación; cooperación; transferencias fondo a fondo; SUSP.

1. INTRODUCTION

Since its inception, the federative state organization model has sought mechanisms to allow its members to participate in coordinating national policies (Abrucio, 2005; Abrucio, Franzese, & Sano, 2013; C. M. Carvalho & Afonso, 2018; Machado & Palotti, 2015). In a landscape where central authorities coexist with local authorities, there is a growing need for cooperation and coordination at the federal level (C. M. Carvalho & Afonso, 2018; Ribeiro, Moreira, Ouverney, Pinto, & C. M. F. P. Silva, 2018; Segatto & Abrucio, 2016).

Cooperative federalism is a system that seeks to reach agreements between federal and state governments (Grin & Abrucio, 2018), and as such, it needs to implement policies with a national scope, which requires integrated actions from all levels of government (V. A. Carvalho & M. R. F. Silva, 2011). In this regard, it is important to build agreements which allow the federative units to maintain their autonomy, thus paving the way for cooperation without interference from the central government (Grin & Abrucio, 2018; Menicucci & Marques, 2016).

Brazil adopts a structured federative cooperation arrangement, preferably obtained through public policies (Grin & Abrucio, 2018). According to Lotta (2014), a national policy system usually generates greater federative convergence. Among the different types of support, fund-to-fund transfers have a distinct structuring power over the government agenda (Grin & Abrucio, 2018; Machado, 2011; Machado & Palotti, 2015; Simão & Orelhano, 2015).

National strategies aimed at health, social assistance, and education policies show that the federal government has managed to establish rules and standards for how other national federal entities act (Abrucio, 2002; Araújo, Freitas, & Lins, 2020; Arretche, 1999; Franzese, 2010; Madeira & A. B. Rodrigues, 2015). Although there are studies on fund-to-fund transfers with other policies, it is a relatively recent mechanism in public security and thus any specific analyses of its impacts are few and far between.

In terms of public security, the federal government has tried to restructure intergovernmental relations since the 1990s by creating public security programs; however, it has not been able to effectively align policies between federal units (Soares, 2007; Spaniol, Moraes, & C. R. G. Rodrigues, 2020). In practice, the measures have done little to make police forces compatible with the demands of the democratic rule of law (Costa & Grossi, 2007; Madeira & A. B. Rodrigues, 2015; Spaniol et al., 2020).

Similar to strategies adopted by other social policies, Law No. 13,756 of 2018 (Lei nº 13.756, de 12 de dezembro de 2018) was created to modernize the National Public Security Fund (FNSP) and make it mandatory to transfer a minimum of 50% of its resources to the states via fund-to-fund transfers (Faria, 2020). In return for receiving funds, state policies are required to align with the national public security policy in a coordinated manner, having defined objectives, targets and indicators (Faria, 2020).

The aim is for fund-to-fund transfers to be used as a mechanism to encourage federative coordination and cooperation in the area of public security, insofar as the states must comply with national public security policy guidelines in order to receive it. The general objective of this study is to analyze fund-to-fund transfers and assess whether they have contributed to the federal coordination and cooperation of public security policies in Brazil.

2. THEORETICAL REFERENCE

2.1 Federalism: emergence and main characteristics

When discussing public policies it is important to look at the political and administrative makeup of the State (Franzese & Abrucio, 2009). The federal state was established in 1787 with the American Constitution, when the colonies renounced their individual sovereignty in order to create a new sphere of government: the Union (Gadelha, 2018). Despite being components of the same political-territorial organization, the federative states maintain a certain degree of their autonomy and establish interdependent relationships with the federal government, as such, decisions are made by more than one level of government (Abrucio & Franzese, 2007; Segatto & Abrucio, 2016). For Elazar (1987), the possibility of acting together in a non-centralized institutional structure, with power being distributed among the different centers, is one of the characteristics that define federalism (Franzese & Abrucio, 2009).

2.2 Theory of federalism as an agreement and theory of cooperative federalism

According to Elazar (1987), the idea of federalism as an agreement is one based on mutual recognition, tolerance, and respect between parties. It does not need any superior or inferior centers of power, and only requires arenas of political decision to a greater or lesser extent (Franzese, 2010). For this author, the objective of the agreement is not only to ensure the integrity of its components, but to establish a set of rules that guarantee autonomy and shared management. According to Franzese (2010), intergovernmental relations are in constant flux, renewing partnerships between

the different centers of power without losing their *status* as an independent unit. Although there is some degree of verticality and asymmetry in federations, they operate, to a certain extent, with contractualized and negotiated relationships between the levels of government (Abrucio, Franzese, & Sano, 2013).

Operating on a matrix structure, the theory of federalism as an agreement allows for a non-centralized, effective exercise of government (Franzese, 2010). As such, it highlights not only the existence of arenas with different scopes, but also the premise that these different arenas must interact for the system itself to work (Franzese, 2010).

The conceptual evolution of cooperative federalism shows that cooperation between federative entities did not involve the decentralization of tasks and responsibilities between them, but rather the non-centralization of them, achieved through comprehensive legislative and fiscal powers shared by entities that maintain as much control as possible over programs and policies at the local level (Gondar, 2011). This is not necessarily a harmonious process, and as such each federative entity uses its own resources when searching the best results for itself.

The multiplicity of decision-making centers makes for increasingly more complex public policies as they depend on the convergence of governments to achieve national objectives (Soares & Machado, 2018). Thus, federative coordination becomes necessary to develop public policies because of the interdependent actions of entities from different levels of government (Abrucio, 2005). In this way, the concept of cooperation can be related to partnerships and integrated arrangements at the territorial and public policy levels (Abrucio, Franzese & Sano, 2013), while the concept of coordination can be defined as the process of creating or using decisions by a collective group of actors in the same field (Lotta, 2014).

2.3 Federalism and public security in Brazil

According to Soares and Machado (2018), Brazilian federalism went through different stages of democracy and authoritarianism, leading to a greater or lesser level of decentralization and different levels of autonomy among its entities. In this context, the Brazilian Federal Constitution of 1988 emphasizes the importance of the Union, bestowing it with the power to coordinate and cooperate with the entities, to create and develop political, social, and material projects that strengthen the country (Gondar, 2011; Machado & Palotti, 2015; Segatto & Abrucio, 2016).

It should be noted that in the area of public security the decentralized federalism implemented in Brazil after the Proclamation of the Republic led to the creation of a highly competitive police system (Costa & Grossi, 2007). Whenever there has been greater state autonomy, there have been no significant intergovernmental cooperation efforts involved, as a result, public security policies in Brazil have generally been designed and implemented in a fragmented and poorly planned way (Ballesteros, 2014; Costa & Grossi, 2007).

The Federal Constitution of 1988 revived the concept in the Federal Constitution of 1937 and defined which institutions are responsible for providing public security (Lima & Mingardi, 2016). However, these constitutional reforms in the 1980s did not result in much progress in terms of how this area is managed (Madeira & A. B. Rodrigues, 2015). The way police organizations were structured, together with the lack of regulation and activities, produced an uncoordinated environment between

the different levels of government (Institute of Economics and Applied Economic Research [IPEA] & Brazilian Public Security Forum [FBS], 2019).

Generally speaking, public security policies in Brazil have been shown to only alleviate situations of crisis. The literature shows that national strategies for public security, created after the redemocratization, were not able to change the policy of specific interventions, which have no strategic alignment and lack defined objectives and goals (V. A. Carvalho & M. R. F. Silva, 2011; Faria, 2020). A number of national public safety plans and programs have been introduced over the last 30 years. They all sought to implement public security policies through the combined effort of the three spheres of government. These policies dealt with preventing violence and reducing criminal activities; however, they were only effective for one political cycle before being abandoned by subsequent administrations (Spaniol et al., 2020).

The National Plan for Public Security and Social Defense (PNSP) was created in 2018 to break these cycles of discontinuity. The first plan, after the re-democratization period, has a ten-year lifespan and is reassessed on a yearly basis as of the second year (Spaniol, et al., 2020). With short and medium-term proposals, the plan stresses the need for coordinated and integrated actions between public security agencies and the federal government (Spaniol, et al., 2020).

Law No. 13,675, of 2018 (Lei nº 13.675, de 12 de dezembro de 2018) also established the Unified Public Security System (SUSP) which determined the Union to be responsible for national public security policy, as well as for articulating, coordinating, and following up on the actions needed to implement it (Soares, 2022).

2.4 Using resource transfers to encourage federative coordination and cooperation

The division of authority between levels of government does not allow for imposition, but it does require induction based on linked conditions, even though the interests of the federal government and other entities may be different (Grin & Abrucio, 2017; Machado & Pallotti, 2015). A successful induction strategy requires the central government to provide other levels of government with financial, political, and administrative resources (Arretche, 1999; V. A. Carvalho & M. R. F. Silva, 2011).

Evidence supports the proposition that the policies and social programs developed by the central government and implemented by local federal entities (Arretche, 2009) organizes and gives consistency to government actions (Machado & Pallotti, 2015). Conditioning and ensuring effective transfers and adhering local governments to the federal government's agenda proved to strongly influence the choices of governments (Lotta & Favaretto, 2016; Soares & Machado, 2018). In this context, conditional financial transfers are a strategic induction tool as they align the priorities of local federal entities with those of the federal government (Machado & Pallotti, 2015). These transfers take on a variety of forms (Gomes, 2009), with fund-to-fund transactions being the most used mechanism (Cunha, Lins, & Soares, 2020; Machado & Pallotti, 2015).

3. METHODOLOGY

In order to analyze the performance of fund-to-fund transfers and assess whether they have contributed to the federal coordination and cooperation of public security policies in Brazil, we divided this work into three stages. Stage 1 involved a survey of FNSP values for the states and the Federal District between 2000 and 2022, both before and after the adoption of fund-to-fund transfers. Stage 2 involved semi-structured interviews with managers who are responsible for preparing and coordinating the decentralization process and for monitoring the execution of decentralized resources, and Stage 3 involves an analysis of coordination and/or cooperation mechanisms set forth in the state application plans during the above-mentioned time period.

As summarized in Box 1, we conducted interviews with managers from the National Secretariat for Public Security for the Ministry of Justice and Public Security (SENASP/MJSP) who, due to the nature of their positions, hold significant decision-making power when it comes to planning, implementing, and monitoring the FNSP's resource decentralization policy. Our analysis involved using the methodology developed by Machado (2014) in his research on the patterns of induction of social policies through conditional intergovernmental transfers¹.

BOX 1 INTERVIEWEE QUALIFICATION

Interviewee	Education	Other Information
E1	Administration Degree – Master's Degree in Public Policy Management.	25-year career in the field of public safety. Has worked with project management for over 10 years.
E2	Law Degree – Expert in Public and Criminal Law.	Has worked in the field of public safety for over 15 years. More than 20 years experience in analyzing agreements and resource transfers.
E3	Law Degree – Expert in Public Sector Management.	25-year career in the field of public safety. Has worked in budget and financial management for over 20 years.

Source: Elaborated by the authors.

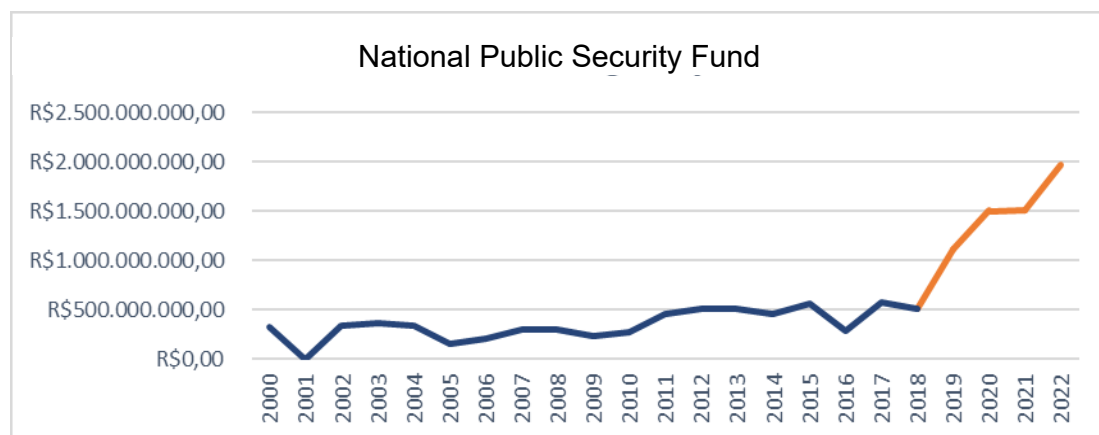
¹ Model adapted for the purpose of this study.

4. RESULTS

4.1 Implementation of the national public security fund

Up until the 2018 fiscal year, the FNSP did not have its own source of funds. The establishment of Law No. 13,756 of 2018 (which allocated a percentage of federal lotteries to the FNSP) led to an increased amount of resources transferred to the FNSP (Figure 1).

FIGURE 1 RESOURCES ALLOCATED TO FNSP BETWEEN 2000 AND 2022²



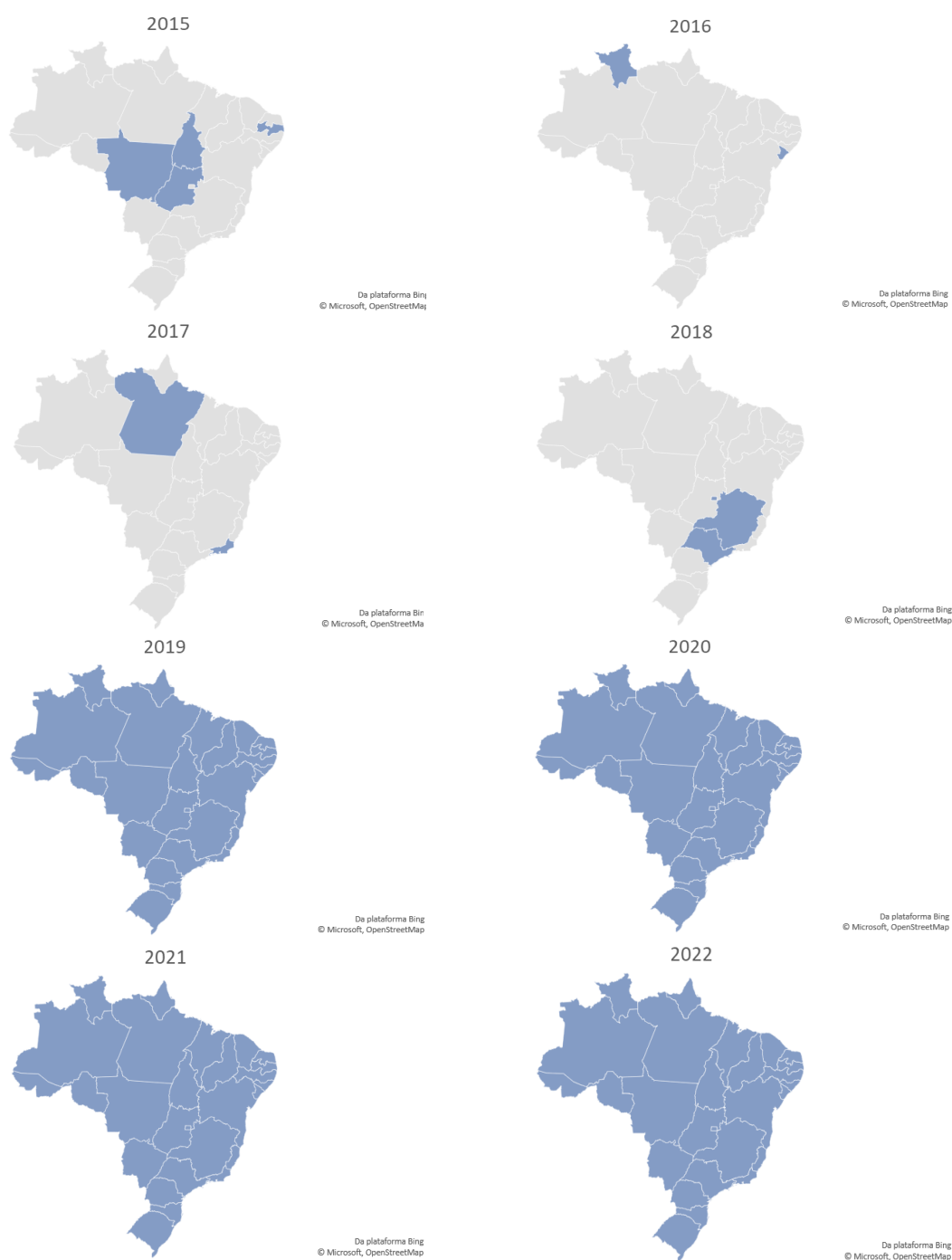
Source: Elaborated by the authors based on the Integrated Budget and Planning System (SIOP).

In order for the states and the Federal District to access FNSP resources they must develop state public security plans. However, according to Soares (2022), the low number of resources and the lack of distribution (that could ensure continuous transfers) has meant that these long-term plans are rare, confirming the lack of attractiveness of the proposed model.

Analyzing the history of decentralizations clearly shows that before fund-to-fund transfers were implemented the decentralization of resources was irregular. Also, there was no guarantee that just because a state received funds one year that it would receive them again the following year. This made it difficult for the states to realize long-term plans and reduced the effective power of the federal government (Soares, 2022).

As of 2018, the addition of FNSP resources and the mandatory allocation of 50% of federal lottery resources going to the states and the Federal District, without the need to formalize agreements or transfer contracts, meant fund-to-fund transfers were attractive to the states as they could draw up their application and state plans for public security (Soares, 2022).

² Updated Allocation (LOA) – Budgetary Unit 30911 – National Public Security Fund. Values referring to budget amendments were not considered (Expenditure Tracker 0001 – National).

FIGURE 2 EVOLUTION OF FNSP RESOURCE DECENTRALIZATION FROM 2015 TO 2022

Source: Elaborated by the authors.

As Figure 2 illustrates, the pattern of decentralization and the allocation of FNSP resources by the states has changed since 2019. This change has allowed all parties to receive FNSP resources. Two other facts can be observed when analyzing the maps from 2019 onwards, in addition to a more substantial contribution of resources: the national distribution of resources and the continuity

of transfers. This information shows that these fund-to-fund transfers now provide the states with funds they can anticipate, which in turn allows them to realize long-term plans. This result is in line with a study by Soares (2022) which shows that the ability to anticipate these resources increases the attractiveness of this transfer model and, consequently, the effective power of the policy as it lines up the priorities of local federal entities with those of the federal government (Machado & Palloti, 2015).

4.2 Adherence of state plans to the PNSP

In order to verify further effects of fund-to-fund transfers on federal coordination and cooperation in public security, we used research conducted by Soares (2022) which measures the adherence of state plans to the PNSP. The study by Soares (2022) achieved its objective by analyzing 33 categories, as shown in Table 1.

TABLE 1 ANALYSIS CRITERIA

Analysis Criteria	Quantity	Adherence
Formalization of the State Public Security Plan (PESP) by law or decree.	14	70%
Validity of PESP.	16	80%
Description of method used to develop the PESP	10	50%
Developing PESP based on evidence (diagnoses and research).	15	75%
PESP alignment with the strategic planning and budget of the federative entity.	4	20%
State public security institutions participating in development of PESP.	18	90%
State public security council participating in development of PESP.	8	40%
Outlining responsibilities of actors involved in executing and monitoring the PESP.	11	55%
Other areas of government participating in development of PESP.	8	40%
Organized civil society and/or community councils participating in development of PESP.	7	35%
Establishing indicators for monitoring the PESP.	15	75%
Establishing targets for monitoring the PESP.	11	55%
Establishing instruments and methodology for monitoring and evaluating the PESP.	8	40%
PESP available on the State Department of Public Security <i>website</i> .	11	55%
PESP interconnected with other state policies and plans.	10	50%
Disclosing municipalities with direct intervention.	7	35%
Integrated operation of public security agencies.	16	80%
Integrated actions included in other areas such as education, health, leisure and culture.	3	15%

Continue

Analysis Criteria	Quantity	Adherence
Providing funding sources for the implementation of the PESP.	6	30%
PESP governance structure.	14	70%
Risk management mechanisms.	3	15%
Prioritizing actions.	16	80%
Reducing homicides.	20	100%
Reducing violence against women.	13	65%
Improving governance and management.	13	65%
Valuing public safety professionals.	20	100%
Increasing control of borders, seaports and airports.	14	70%
Increasing control of firearms and ammunition.	15	75%
Fighting organized crime.	13	65%
Improving control and accountability mechanisms of police activities.	3	15%
Improving prison system management.	11	55%
Preventing and clamping down on violent property crimes.	15	75%
Strengthening municipalities and their role in crime and violence prevention.	4	20%
Average	11.27	56.35%

Source: Soares (2022).

The study by Soares (2022) was based on 20 state public safety plans. Adherence was measured according to the categories included in the state plans. As Table 1 illustrates, Soares (2022) found only 56.35% of state plans adhered to the PNSP.

Soares (2022) classified the adherence index in his research as “unsatisfactory adherence”. However, there is other information in his research which we found relevant to this study: the plans he analyzed only had two categories showing 100% adherence to the PNSP – valuing public safety professionals and reducing homicides. These two categories were used as guidelines for developing application plans and are required in order for the states to receive FNSP resources³.

Another important finding on fund-to-fund transfers and their implication in federative coordination and cooperation in public security, as noted by Soares (2022), is Decree No. 631, issued on July 6, 2019 (Portaria nº 631, de 6 de julho de 2019) by the Ministry of Justice and Public Security (MJSP). This official order laid out the criteria for determining the percentage of FNSP resources which would be made available to each state. This criteria included geographical, populational, and

³ Decree No. 790 of 2019 (Portaria nº 790, de 24 de outubro de 2019) and Decree No. 793 of 2019 (Portaria nº 793, de 24 de outubro de 2019) originally regulated Valuing Public Safety Professionals and Combating Violent Crime. MJSP Decree nº 483 of 2021 (Portaria MJSP nº 483, de 9 de novembro de 2021), is currently in force, which changed the nomenclature of Combating Violent Crime to Strengthening Public Security and Social Defense Institutions.

socioeconomic aspects, crime rates and violence rates, border protection, bolstering the Integrated Network of Genetic Profiles Databank (RIBPG), and creating civil police units trained specifically for combating corruption.

For example, before 2019 (the year this criteria was created) only the state of Maranhão had specialized civil police units trained for combating corruption. In 2019, a total of 15 states created 23 specialized units, and in 2020, 11 states created 20 specialized units. This meant that 100% of the states had specialized anti-corruption units (Soares, 2022).

4.3 Interviews

The interviews conducted with SENASP/MJSP managers were analyzed and framed as a contract (federal government) or shared management (cooperation between the Union and states), according to the methodology developed by Machado (2014).

These were grouped into three general categories: (i) strength of agenda, (ii) control over state behavior, and (iii) organizational interaction (Table 2).

As illustrated in Table 2, these categories were scored according to the following parameters:

- 1) The score for each category was reached by adding together the scores of all corresponding markers. We determined the first category to vary between zero (0) and one (1) point, the maximum value of which is equally divided by the total of connected markers (in the first category, each of the markers could have a score of up to 0.33, in the second category they could have up to 0.16, and in the third, up to 0.20).
- 2) We arbitrarily determined zero (0) to correspond to the variation of a marker in the ideal type of contract and that the maximum possible score (0.33, 0.16, or 0.20) corresponds to the variation of the ideal type of management being shared.
- 3) Adding together the scores of the markers from each attribute, we arrive at the final index score for each incentive, defining its position between the two ideal types, obtained by the mathematical average of the values of the three attributes. Thus, the closer to zero (0), the closer to the contract. The closer to one (1), the closer to shared management.

TABLE 2 CATEGORIES AND MARKERS

Categories	Markers	Contract	Shared Management
Strength of agenda	Policy Concept and Design	0.00	0.33
	State Participation	0.00	0.33
	Defining Goals	0.00	0.33
Total		0.00	1.00

Continue

Categories	Markers	Contract	Shared Management
Control of state behaviour	Resource Planning	0.00	0.16
	Resource Application	0.00	0.16
	Defining Actions	0.00	0.16
	Standardized Goods and Services	0.00	0.16
	Monitoring and Evaluation of Results	0.00	0.16
	Control, Assessment and Sanctions	0.00	0.16
Total		0.00	1.00
Organizational Interaction	Horizontal Coordination	0.00	0.20
	Vertical Coordination	0.00	0.20
	Planning	0.00	0.20
	Induction	0.00	0.20
	Operational Capacity	0.00	0.20
Total		0.00	1.00
Total		0.00	3.00

Source: Elaborated by the authors.

4.3.1 Strength of agenda

When asked about the process of drawing up the fund-to-fund transfer policy, the candidates, unanimously, stated that the policy was created by the Union, with no participation from the states and municipalities. According to the interviewees' statements, it is unclear whether the Union took the opinions of the other entities into account or not, either in the design and elaboration of the policy or in the initial phase of implementation. In this regard, the process tends to center around the central government, which established national policies without any local contributions.

When commenting on the level of cooperation between the Union and the states in developing and implementing policies, all managers stated that the initial phase of planning was mainly handled by the Union, which made a law for FNSP resource contribution. However, there have been opportunities to hold discussions with the states about improving the current policy by making a more cooperative and less Union-centralized decision-making process.

When speaking about the states and their participation in setting achievable goals with the FNSP resources, interviewee 1 states that although the Union establishes what areas the policy will address, these areas only have one line of action, which the states must then work with to come up with their application plans. The goals are defined by the states. The Union's role as a coordinator is to define the priorities for national public security, while the states have the freedom to define their action strategies through the application plans.

The conception and development of the policy was mostly done by the Union even though there is evidence of state participation when improvements were made to the policy. In general, this task was characterized as unilateral by the federal government. We found that the states were responsible with setting the goals in accordance with Union guidelines, thus characterizing the shared management. As such, the strength of the agenda tends to lie more in the management contract, with an index of 0.33, as shown in Box 2.

BOX 2 FUND-TO-FUND TRANSFER POLICY – STRENGTH OF AGENDA CATEGORY

Category – Strength of Agenda			
Marker	Contract		Shared Management
Policy Concept and Development	Policy conceived unilaterally by the Union or by the state (0.00).	X	Policy conceived and developed through negotiations between spheres of government, or between state agencies (0.33).
State Participation	Categories chosen unilaterally by the Union (0.00).	X	States participating in choosing categories (0.33).
Definition of Goals	Goals and results defined by the Union (0.00).	X	Goals and results to be achieved agreed with state governments (0.33).
Total		0.33	

Source: Elaborated by the authors.

4.3.2 Control of state behaviour

When speaking on the definition and control of financial flows, the interviewees stated that the FNSP resources are guaranteed under a legal provision which determines that lottery resources will go to the states, as well as what percentage of said resources will be made available. However, interviewee 3 states that states participate in policy improvement processes when re-discussing the apportionment criteria. According to this same interviewee, the indicators are reviewed annually in order to improve the policy. The Union takes advantage of state contributions to adapt the transfer percentages to the reality and public security performance of each one of them. Thus, enabling states to participate in policy improvements results in a more cooperative relationship with the Union.

When asked about the application plans and how they must align with the Union's categories, thus limiting state autonomy for developing public security actions, the interviewees stated that the Union only acts as a guideline and that each state has the power to decide its own action. The categories inform how the Union will prioritize public safety, but grant autonomy for the entity to choose which actions best fit its reality.

With regards to monitoring, evaluation, and control, the interviewees stated that the Union verifies whether the state plans adhere to the established categories. In this way, the Union encourages the

states to participate in a coordinated manner, according to the objectives established by national policy. Control occurs at the state level with state public safety councils (as pointed out by interviewee 2) and monitoring reports presented every six months and annually by the states. During the financial year, corrective measures can be taken by both the states and the Union, which could even include freezing funds.

The monitoring and evaluation of the results are also performed cooperatively, with the states presenting their reports and the Union performing assessments. The Union would take on a more prominent role if any irregularities were identified with control and assessment restrictions. The analyses showed a greater approximation with shared management than with state behavior control, with an index of 0.66, as shown in Box 3.

BOX 3 FUND-TO-FUND TRANSFER – CONTROL OF STATE BEHAVIOR

Category – Control of State Behavior			
Marker	Contract		Shared Management
Resource Planning	Definition and control carried out by the Union (0.00).	X	Flexible authorization for using transferred resources for the incentive (0.166).
Resource Utilization	Strict authorization regarding the use of transferred resources (0.00).	X	Flexible authorization for using transferred resources for the incentive (0.166).
Defining Actions	Standardized national actions (0.00).	X	Autonomy for defining actions at the local level (0.166).
Standardizing goods and services	National standards for goods and services offered to the public (0.00).	X	Flexible towards “customizing” goods and services at the local level (0.166).
Monitoring and assessing results	Monitoring and assessment performed exclusively by the Union (0.00).	X	Even if monitoring is directly carried out by the Union, data is shared and discussed between government spheres (0.166).
Control, assessment and sanctions	Union has exclusive control of assessment and control systems (0.00).	X	Assessment and control of state governments (application of resources) with the participation of state government representatives (0.166).
Total		0.66	

Source: Elaborated by the authors.

4.3.3 Organizational interaction

With regards to cooperation at the state level, all state public security institutions are not required to participate in conjunction when preparing application plans. Although this type of interaction does occur in certain states, we are unable to determine a widespread culture of cooperation between institutions at the national level.

With regards to the development of public policies, interviewee 1 observes that programs are acting as guidelines for states to implement coordinated and systemic actions for administering resources from the national fund. Interviewee 2 states that the Union has enhanced its data collection on state public security so that national guidelines are able to meet local demands. Interviewee 3 states that valuing public security professionals is an important aspect of fund transfer planning, but the maturity and improvement of the policy have a number of elements and factors:

[...] (fund-to-fund) strengthens and helps improve the policy, but it needs to be complemented by diagnostics, by a network, by other monitoring elements that cause the resource to constantly be revalued.

The interviewee statements show that fund-to-fund transfers have the capacity to change behaviors and planning dynamics, thus contributing to the coordination and improvement of public security policies.

Interviewee 1 claims there was increased interaction between SENASP and state public security agencies for the development of public policies after fund-to-fund transfers were implemented:

Today we have a collaborative network. Each state has one or more focal points, and today it works very well. We interact quite well. We periodically hold events. This network allows us to support the state in difficult times or if there are any questions that need to be asked, has difficulty, has any doubts, we support remotely or sometimes face-to-face.

Interviewee 2 mentions that the system allowed for increased dialogue between the institutions, thus providing greater integration.

When asked about how the decentralization of FNSP resources contributes to the integration and cooperation of the federative units, interviewee 1 said that a collaborative network of information exchange and good practices was formed between SENASP, the state bodies, and the states. Interviewee 2, on the other hand, reported that it is a maturing process, but that all parties were integrated in their use of resources. Interviewee 3 recalls that, historically speaking, resources for public security at the state level are most often largely absorbed by expenditures and personnel expenses. He believes that, once a national policy was established, the fund-to-fund resources allowed for more structured investments.

With regards to the need for interaction between the Union and the states, we asked whether the federal government relies on the operational capacity of the states to implement the national public security policy. All interviewees highlighted the importance of this interaction and stated that implementing the policy is only possible with the operational capacity of the states. The interviewee

responses reinforce Agranoff (1990 as quoted by Franzese, 2010) who states that, although the Union has the power to regulate and use resource transfers for federal programs, local governments have the power to implement them, which the central government does not have total control of.

According to managers, fund-to-fund transfers contribute to greater federal coordination and cooperation in public security. Therefore, according to our analysis (Box 4), the organizational interaction is characterized by shared management, with an index of 1.00.

BOX 4 FUND-TO-FUND TRANSFER – ORGANIZATIONAL INTERACTION

Category – Organizational Interaction			
Marker	Contract		Shared Management
Horizontal Coordination	Unilaterally prepared by the Secretariat of Public Security. (0.00).	X	Participation of public security agencies in the preparation of plans (0.20).
Planning	Methodology for Planning Unchanged (0.00).	X	Planning methodology adjusted due to fund-to-fund transfers (0.20).
Vertical Coordination	Maintaining interaction between organs (0.00).	X	Increasing interaction between organs (0.20).
Induction	No change (0.00).	X	Greater coordination and cooperation (0.20).
Operational Capacity	Federal government has operational capacity to implement the policy (0.00).	X	Federal government depends on the operational capacity of the states (0.20).
Total		1.00	

Source: Elaborated by the authors.

The sum of the indices for each individual category was a total of 2 out of a total of 3 possible points. The final average for the categories was an index of 0.66, thus defining the fund-to-fund transfer policy as a shared management policy.

4.4 Stage 3 – analysis of application plans

The application plan presents the state's proposals for the FNSP resources. It identifies local public security, proposes which actions the state plans to carry out, as well as its objectives, indicators, and goals. As a coordination strategy, MJSP Decree No. 480 of 2021 (Portaria MJSP nº 480, de 9 de novembro de 2021) established that each project, activity, or action included in the application plan

must align with the actions, strategies and goals of the PNSP. They must also be compatible with state or district plans for public security and social defense, and with the program or funding made available by the MJSP. Alignment is verified and approved by MJSP teams, which is essential toward the state receiving FNSP resources.

In this study, we used the application plans for Violent Crime Reduction⁴ in 2019. A total of 27 application plans were analyzed to identify state autonomy in planning, although these plans followed the guidelines established by the federal government.

With respect to the flexibility of using resources, all states presented acquisition plans according to their local needs. Of note is that 20 of the 27 federative units prioritized acquisitions aimed at technological innovations. One of the reasons for this is the emphasis on improving communication and information sharing among institutions. For the most part, the execution of building works and interventions were made for the improvement of command and control centers. Ten federative units prioritized training programs in their plans. These varied between postgraduate courses and specializations in technology, management, and operational training. Fifteen states prioritized the purchase of vehicles, personal protective equipment (PPE), and weapons.

The diversity of acquisitions, goals, and indicators in the plans corroborates what the managers said in the interviews, that the fund-to-fund decentralization policy cooperates more with the federal government than it does impose on it. The autonomy we observed of federal entities dialogues with literature, which states that the federative agreement does not favor central government priorities, it favors induction mechanisms that are beneficial at the local level (Grin & Abrucio, 2018). The freedom that the states and the Federal District had in presenting indicators and goals follows this line of understanding.

In the same sense, the expected results and impacts correspond to federal government guidelines. Investments in improving technological capacity, expanding the communication network, sharing information, and improving the quality of operational and management actions reinforce the coordination exercised by the central government. Thus, our analysis determined that there are elements of coordination and cooperation in the application plans.

5. FINAL CONSIDERATIONS

This study aimed to verify fund-to-fund transfers and their contribution to federal coordination and cooperation regarding public security policies in Brazil.

Based on the data we analyzed, we concluded that the expansion of FNSP resources, the development of state and application plans by the states, as well as the predictability of transfers are all elements that contribute to greater federative cooperation in national public security.

Our analysis of the application plans also corroborated what the managers had said in the interviews: that the fund-to-fund decentralization policy cooperates more with the federal government than it does impose on it. The autonomy we observed of federal entities dialogues with literature,

⁴ MJSP Decree No. 483 of 2021 (Portaria MJSP nº 483, de 9 de novembro de 2021) changed the nomenclature to: Strengthening Public Security and Social Defense Institutions.

which states that the federative agreement does not favor central government priorities, it favors induction mechanisms that are beneficial at the local level (Grin & Abrucio, 2018).

As a result, our research confirmed what other studies had already determined about the power of fund-to-fund transfers in the cooperation and coordination of national policies. The expansion of resources and the obligation to share them with the states benefit state policies that align with Union guidelines. The distribution of resources on a regular basis and based on criteria, state and application plans aligning with national guidelines, along with the perceptions of managers confirm the driving force of this transfer mechanism.

REFERENCES

- Abrucio, F. L. (2002). Descentralização e coordenação federativa no Brasil: lições dos anos FHC. In F. L. Abrucio, & M. R. Loureiro (Org.), *O Estado numa era de reformas: os anos FHC* (Coleção Gestão Pública, Vol. 7, parte 2, pp. 143-216). Brasília, DF: Seges.
- Abrucio, F. L. (2005). A coordenação federativa no Brasil: a experiência do período FHC e os desafios do governo Lula. *Revista de Sociologia e Política*, 24, 41-67. Retrieved from <https://doi.org/10.1590/S0104-44782005000100005>
- Abrucio, F. L., & Franzese, C. (2007). Federalismo e políticas públicas: o impacto das relações intergovernamentais no Brasil. In M. F. I. Araújo, & L. Beira (Orgs.), *Tópicos de economia paulista para gestores públicos* (Vol. 1, pp. 13-31). São Paulo, SP: Edições Fundap.
- Abrucio, F. L., Franzese, C., & Sano, H. (2013). Trajetória recente da cooperação e coordenação no federalismo brasileiro: avanços e desafios. In G. Bercovici, & J. C. Cardoso Jr. (Orgs.), *República, democracia e desenvolvimento: contribuições ao Estado brasileiro contemporâneo* (Série Diálogos para o Desenvolvimento, Vol. 10, pp. 129-164). Brasília, DF: Ipea.
- Araújo, R. J. R., Freitas, F. L., Jr., & Lins, D. C. (2020). Segurança Pública estadual Brasileira: o que influencia seu desempenho? *Revista de Administração Contabilidade e Sustentabilidade*, 10(1), 89-99. Retrieved from <https://reunir.revistas.ufcg.edu.br/index.php/uacc/article/view/889>
- Arretche, M. (1999). Políticas sociais no Brasil: descentralização em um Estado federativo. *Revista Brasileira de Ciências Sociais*, 14(40), 111-141. Retrieved from <https://doi.org/10.1590/S0102-69091999000200009>
- Arretche, M. (2009). Continuidades e descontinuidades da federação brasileira: de como 1988 facilitou 1995. *Dados*, 52(2), 377-423. Retrieved from <https://doi.org/10.1590/S0011-52582009000200004>
- Ballesteros, P. R. (2014). Gestão de políticas de segurança pública no Brasil: problemas, impasses e desafios. *Revista Brasileira de Segurança Pública*, 8(1), 6-22. Retrieved from <https://revista.forumseguranca.org.br/index.php/rbsp/article/view/353>
- Carvalho, C. M., & Afonso, J. R. R. (2018). Coordenação e relações intergovernamentais em federações avançadas: algumas lições para o Brasil. *Revista Jurídica Luso-Brasileira*, 4(6), 1571-1604. Retrieved from https://www.cidp.pt/revistas/rjlb/2018/6/2018_06_1571_1604.pdf
- Carvalho, V. A., & Silva, M. R. F. (2011, June). Política de segurança pública no Brasil: avanços, limites e desafios. *Revista Katálysis*, 14(1), 59-67. Retrieved from <https://doi.org/10.1590/S1414-49802011000100007>
- Costa, A., & Grossi, B. C. (2007). Relações intergovernamentais e segurança pública: uma análise do fundo nacional de segurança pública. *Revista Brasileira de Segurança Pública*, 1(1), 6-20. Retrieved from <https://doi.org/10.31060/rbsp.2007.v1.n1.4>
- Cunha, E. D. P., Lins, I. L., & Soares, M. M. (2020). Federalismo e conselhos de assistência social: uma análise a partir do financiamento. *Opinião Pública*, 26(1), 127-157. Retrieved from <https://doi.org/10.1590/1807-01912020261127>
- Elazar, D. J. (1987). *Exploring federalism*. Tuscaloosa, AL: University of Alabama Press.
- Faria, J. A. V. (2020). O financiamento da segurança pública no Brasil à vista da publicação da Lei n. 13.675, de 11 de junho de 2018. *Revista do Tribunal de Contas do Estado de Minas Gerais*, 37(2), 25-41. Retrieved from <https://revista.tce.mg.gov.br/revista/index.php/TCEMG/article/view/411>
- Franzese, C. (2010). *Federalismo cooperativo no Brasil: da Constituição de 1988 aos sistemas de políticas públicas* (Doctoral Dissertation). Fundação Getúlio Vargas, São Paulo, SP.
- Franzese, C., & Abrucio, F. L. (2009). A combinação entre federalismo e políticas públicas no Brasil pós-1988: os resultados nas áreas de saúde, assistência social e educação. In M. C. G. Rocha (Org.), *Reflexões para Ibero-América: a avaliação de programas sociais* (pp. 25-42). Brasília, DF: Enap.
- Gadelha, S. R. D. B. (2018). *Introdução ao federalismo e ao federalismo fiscal no Brasil*. Brasília, DF: Enap.
- Gomes, E. C. S. (2009). Fundamentos das transferências intergovernamentais. *Direito Público*, 6(27), 76-93. Retrieved from <https://www.portaldeperiodicos.idp.edu.br/direitopublico/article/view/1565>

- Gondar, A. F. P. (2011). *Limites e possibilidades do federalismo cooperativo: uma análise da Alemanha e do Brasil* (Doctoral Dissertation). Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro, RJ.
- Grin, E. J., & Abrucio, F. L. (2017). Quando “feds” e “locals” não falam a mesma língua: uma análise sobre dissonâncias na cooperação federativa. *Cadernos EBAPE.BR*, 15(3), 694-719. Retrieved from <https://doi.org/10.1590/1679-395164940>
- Grin, E. J., & Abrucio, F. L. (2018). Quando nem todas as rotas de cooperação intergovernamental levam ao mesmo caminho: arranjos federativos no Brasil para promover capacidades estatais municipais. *Revista do Serviço Público*, 69, 85-122. Retrieved from <https://doi.org/10.21874/rsp.v69i0.3584>
- Instituto de Economia Pesquisa Econômica Aplicada, & Fórum Brasileiro de Segurança Pública. (2019). *Atlas da Violência*. Brasília, DF: Ipea.
- Lima, R. S. D., Bueno, S., & Mingardi, G. (2016). Estado, polícias e segurança pública no Brasil. *Revista Direito GV*, 12(1), 49-85. Retrieved from <https://doi.org/10.1590/2317-6172201603>
- Lei nº 13.675, de 12 de dezembro de 2018. (2018). Dispõe sobre o Fundo Nacional de Segurança Pública (FNSP) e dá outras providências. Brasília, DF. Retrieved from http://www.planalto.gov.br/ccivil_03/_Ato2015018/2018/Lei/L13756.htm
- Lei nº 13.756, de 12 de dezembro de 2018. (2018). Disciplina a organização e o funcionamento dos órgãos responsáveis pela segurança pública, nos termos do § 7º do art. 144 da Constituição Federal e dá outras providências. Brasília, DF. Retrieved from http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2018/Lei/L13675.htm
- Lotta, G. S. (2014). Agentes de implementação: uma forma de análise de políticas públicas. *Cadernos Gestão Pública e Cidadania*, 19(65), 186-206. Retrieved from <https://doi.org/10.12660/cgpc.v19n65.10870>
- Lotta, G. S., & Favareto, A. (2016). Desafios da integração nos novos arranjos institucionais de políticas públicas no Brasil. *Revista de Sociologia e Política*, 24(57), 49-65. Retrieved from <https://doi.org/10.1590/1678-987316245704>
- Machado, J. A. (2011). *Relatório de pesquisa: relações intergovernamentais e coordenação de políticas sociais: eficácia e contenção do poder no desenho dos incentivos financeiros federais*. Belo Horizonte, MG: UFMG.
- Machado, J. A. (2014). Padrões de indução de políticas sociais por meio de transferências intergovernamentais condicionadas. *Revista Teoria & Sociedade*, 22.1, 191-218. Retrieved from <https://teoriaesociedade.fafich.ufmg.br/index.php/rts/article/view/144>
- Machado, J. A., & Palotti, P. L. D. M. (2015, junho). Entre cooperação e centralização: federalismo e políticas sociais no Brasil pós-1988. *Revista Brasileira de Ciências Sociais*, 30(88), 61-82. Retrieved from <https://doi.org/10.17666/308861-82/2015>
- Madeira, L. M., & Rodrigues, A. B. (2015). Novas bases para as políticas públicas de segurança no Brasil a partir das práticas do governo federal no período 2003-2011. *Revista de Administração Pública*, 49(1), 3-22. Retrieved from <https://doi.org/10.1590/0034-76121702>
- Menicucci, T., & Marques, A. M. D. F. (2016). Cooperação e coordenação na implementação de políticas públicas: o caso da saúde. *Dados – Revista de Ciências Sociais*, 59(3), 823-865.
- Portaria nº 631, de 6 de julho de 2019. (2019). Dispõe sobre os critérios de rateio dos recursos do Fundo Nacional de Segurança Pública aos Estados e ao Distrito Federal. Retrieved from <https://www.in.gov.br/en/web/dou/-/portaria-n-631-de-6-de-julho-de-2019-190104505>
- Portaria nº 790, de 24 de outubro de 2019. (2019). Regulamenta o incentivo financeiro das ações do Eixo Valorização dos Profissionais de Segurança Pública, no âmbito da Política Nacional de Segurança Pública e Defesa Social e do Sistema Único de Segurança Pública, com os recursos do Fundo Nacional de Segurança Pública, previstos no inciso I do art. 7º da Lei nº 13.756, de 12 de dezembro de 2018. Retrieved from <https://www.in.gov.br/en/web/dou/-/portaria-n-790-de-24-de-outubro-de-2019-223853359>
- Portaria nº 793, de 24 de outubro de 2019. (2019). Regulamenta o incentivo financeiro das ações do Eixo Enfrentamento à Criminalidade Violenta, no

âmbito da Política Nacional de Segurança Pública e Defesa Social e do Sistema Único de Segurança Pública, com os recursos do Fundo Nacional de Segurança Pública, previstos no inciso I do art. 7º da Lei nº 13.756, de 12 de dezembro de 2018. Retrieved from <https://www.in.gov.br/en/web/dou/-/portaria-n-793-de-24-de-outubro-de-2019-223853575>

Portaria MJSP nº 480, de 9 de novembro de 2021. (2021). Dispõe sobre os procedimentos para transferência obrigatória de recursos do Fundo Nacional de Segurança Pública - FNSP aos Fundos de Segurança Pública dos Estados e do Distrito Federal e dá outras providências. Retrieved from <https://www.in.gov.br/en/web/dou/-/portaria-mjsp-n-480-de-9-de-novembro-de-2021-359082983>

Portaria MJSP nº 483, de 9 de novembro de 2021. (2021). Dispõe sobre os procedimentos para transferência obrigatória de recursos do Fundo Nacional de Segurança Pública - FNSP aos Fundos de Segurança Pública dos Estados e do Distrito Federal e dá outras providências. Retrieved from <https://in.gov.br/en/web/dou/-/portaria-mjsp-n-483-de-9-de-novembro-de-2021-359080774>

Ribeiro, J. M., Moreira, M. R., Ouverney, A. M., Pinto, L. F., & Silva, C. M. F. P. (2018). Federalismo e políticas de saúde no Brasil: características institucionais e desigualdades regionais. *Ciência & Saúde Coletiva*, 23(6), 1777-1789. Retrieved from <https://doi.org/10.1590/1413-81232018236.07932018>

Segatto, C. I., & Abrucio, F. L. (2016). A cooperação em uma federação heterogênea: o regime de colaboração na educação em seis estados brasileiros. *Revista Brasileira de Educação*, 21(65), 411-429. Retrieved from <https://doi.org/10.1590/S1413-24782016216522>

Simão, J. B., & Orellano, V. I. F. (2015). Um estudo sobre a distribuição das transferências para o setor de saúde no Brasil. *Estudos Econômicos*, 45(1), 33-63. Retrieved from <https://doi.org/10.1590/0101-4161201545133jbv>

Soares, J. R. A. B. (2022). *Política Nacional de Segurança Pública e Defesa Social: análise da aderência dos planos estaduais de segurança pública e das capacidades estatais* (Master Thesis). Universidade de Brasília, Brasília, DF.

Soares, L. E. (2007). A política nacional de segurança pública: histórico, dilemas e perspectivas. *Estudos Avançados*, 21(61), 77-97. Retrieved from <https://doi.org/10.1590/S0103-40142007000300006>

Soares, M. M., & Machado, J. A. (2018). *Federalismo e políticas públicas*. Brasília, DF: Enap.

Spaniol, M. I., Moraes, M. C., Jr., & Rodrigues, C. R. G. (2020). Como tem sido planejada a Segurança Pública no Brasil? Análise dos Planos e Programas Nacionais de Segurança implantados pós-redemocratização. *Revista Brasileira de Segurança Pública*, 14(2), 100-127. Retrieved from <https://doi.org/10.31060/rbsp.2020.v14.n2.1035>

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