ipea Institute for Applied Economic Research

Chapter title	PRESENTATION
Authors	Natália Massaco Koga Pedro Lucas de Moura Palotti Janine Mello Maurício Mota Saboya Pinheiro
DOI	http://dx.doi.org/10.38116/978-65-5635-070-7/presentation

Book title	PUBLIC POLICY AND USE OF EVIDENCE IN BRAZIL: CONCEPTS, METHODS, CONTEXTS AND PRACTICES
Editors	Natália Massaco Koga Pedro Lucas de Moura Palotti Janine Mello Maurício Mota Saboya Pinheiro
Volume	-
Series	-
City	Brasilia
Publisher	Institute for Applied Economic Research (Ipea)
Year	2024
Edition	-
ISBN	978-65-5635-070-7
DOI	http://dx.doi.org/10.38116/978-65-5635-070-7

PRESENTATION

Natália Massaco Koga[1]
Pedro Lucas de Moura Palotti[2]
Janine Mello[3]
Maurício Mota Saboya Pinheiro[4]

1 INTRODUCTION

The use of evidence as a support for government action is not a new theme in the debate about the production and legitimization of State action. In recent decades, however, the evidence-based policy movement (EBPPs) has intensified the defense that more and better evidence should be produced as instruments capable of guiding the production of policies. In contrast, different authors have called attention to the analytical and conceptual limits of restricted notions of evidence, supported by assumptions of instrumental rationality present at the core of the role attributed to scientific knowledge in modern times (Parkhurst, 2017; Cairney, 2019; Nutley, Walter and Davies, 2007; Jasanoff, 2012).

This book is part of that debate and aims to fill two gaps. First, it seeks to reduce the scarcity of studies on using evidence in different areas and levels of government in Brazil. Second, and mainly, it analyzes the dynamics of evidence use based on an expanded conception of what does or does not constitute evidence in policy. Faria and Sanches, in chapter 3, show that this agenda of studies is relatively recent in the country, with few publications. In addition, it is late in relation to the approach of EBPPs, which became internationally widespread in the 1990s. In the analyzed studies, there is a predominant defense of the principles, objectives, and methods of the EBPPs. Although this defense is, here and there, "spiced up by more topical criticisms",[5] Brazil still lacks a more mature dialogue with the already appreciable critical, analytical, and propositional literature produced abroad. As a result of the research *What does inform policy in Brazil: usage and non-usage of evidence by federal bureaucrats*, coordinated by the Diest/Ipea, in a joint effort with researchers from the Brazilian Federal District Planning Company (Codeplan), the Institute of Development Studies (IDS), and the University of Amsterdam, with support from the Economic Commission for Latin America and

1. Specialist in policies and government management at the Department of Studies and Policies of the State, Institutions and Democracy of the Institute for Applied Economic Research (Diest/Ipea). E-mail: natalia.koga@ipea.gov.br.
2. Specialist in policies and government management at Diest/Ipea. E-mail: pedro.palotti@ipea.gov.br.
3. Specialist in policies and government management at Diest/Ipea. E-mail: janine.mello@ipea.gov.br.
4. Researcher at Diest/Ipea. E-mail: mauricio.saboya@ipea.gov.br.
5. See chapter 3 in this book, written by Faria and Sanches.

the Caribbean (ECLAC), considering the ECLAC-Ipea Cooperation Agreement and Ipea's International Cooperation Program (Procin), this publication counted on the participation of 51 authors from 22 national and international institutions. Throughout its 28 chapters, this work illustrates how evidence plays a role in policymaking in various thematic areas, the three branches of government, and different segments of the public bureaucracy. The theoretical and methodological diversity is a valuable characteristic of the studies published here, as is the multiplicity of backgrounds, areas of knowledge, and institutions to which the authors belong.

Given Ipea's mission to *improve policies essential to Brazilian development*, *by producing and disseminating knowledge and advising the State in its strategic decisions*, we strongly believe in the potential contribution of this book to the agenda of studies on how evidence, in its moderate conception (as we will discuss below), has been incorporated into the policy and decision-making on issues that affect the wellbeing conditions of the Brazilian population. Furthermore, we emphasize that, in producing this book, the pandemic of covid-19 has made the debate even more urgent, rich, and challenging.

This presentation is organized into five key points that dialogue with the analytical efforts of the set of chapters while simultaneously proposing an interaction with central aspects of recent literature on evidence in policymaking in Brazil and abroad. Although there is a relationship between the key points and the book sections, the discussions suggested are not restricted to the chapters of each section. In fact, they aim to encompass the publication as a whole. The purpose was to let readers locate the different thematic sections suggested throughout the book. We emphasize that this is our initial glance, and other topics may be identified since the contributions of each chapter are not restricted to the discussions presented here.

We would like to thank the authors who have been with us during this fruitful journey and the dozens of reviewers and collaborators who have allowed this publication to be published. It is also worth clarifying that the references to the chapters in this *Presentation* obviously do not fully reflect their individual contributions. The organizers suggested additional highlights and reflections, but unfortunately, they had to be synthesized around the five key themes chosen for this already extensive presentation. We hope to remain in dialogue with this network of scholars and practitioners to develop this research agenda further. We also thank Professor Justin Parkhurst, one of the main international references in the field, who kindly accepted our invitation to write the preface of this publication in a rich and open dialogue with the organizers. We wish you all a pleasant reading!

2 THE CONCEPT OF EVIDENCE IS POLYSEMIC AND RELATES TO MULTIPLE

INFORMATIONAL SOURCES: THE PROBLEM OF THE CONTEXTUAL FRAME

Instrumental rationality can be conceived as the rational use of means to achieve previously defined ends. In this specific use of human reason, the fundamental assumption is that there is a reasonable degree of certainty in the knowledge concerning the realities about which problem solutions are sought. Throughout history, various streams of philosophical, political, and social thought have defended using instrumental rationality to achieve well-being and social progress. Nevertheless, contemporary societies are increasingly complex, which seems to undermine the belief that there can be some certainty in social knowledge. Reinforcing this skepticism is that, despite the exponential increase in the availability of data, computational capacity, and technical and scientific knowledge, the quality of public decisions – measured in terms of general welfare – does not seem to have grown at the same pace. Paradoxically, this leads to the need to mobilize more and more data, science, and technology to understand and act upon social realities through policies.

The traditional approach to EBPPs focuses on the use of instrumental rationality. The instruments, in this case, would be the evidence, that is, the objective facts that would serve as a basis for decision-making in policy. This approach, especially in its more rationalist versions, treats the results of scientific research as the only valid form of evidence about what works or does not work in policy. In other words, EBPPs associate evidence with scientific knowledge (chapter 2). Nonetheless, as the reality of contemporary social systems seems to indicate, it is implausible that using instrumental rationality purely on scientific evidence is sufficient to ensure social progress and welfare in the long run.

Therefore, we need a comprehensive view of what evidence means to be used as a policy instrument. To this end, we first need a conceptual analysis of evidence in policy theory. That is the fundamental objective of section 1 of this book.

What is evidence in public policy? Pinheiro, in chapter 1, proposes *a moderate model*, which eschews a priori stipulated definition of evidence and defines the field of application of this concept based on contexts of concrete use of evidence. The model admits that the realities underlying policies are highly complex, multicausal, and subject to uncertainty. However, it is also assumed that they can be, to some degree, known and deliberately modified to achieve collective welfare ends. In this aspect, the analysis proposed by Pinheiro seems to distance itself from radically *constructionist* interpretations of policies and policymakers' work, without, however, aligning itself with mechanistic, positivist, or ultra-rationalist views of policies, which seem to focus only on instrumental rationality. Moreover – opposing a *reification* of the concept that tends to reduce it to a type of *quantitative evidence* – the moderate model admits several kinds of evidence and methods,

besides demanding special attention to the diversity of the epistemological status of the areas of knowledge concerning policies. In turn, the model's moderate character is verified not only in its openness to plurality but also in its attention to both the limits of knowledge and contexts of action.

The contexts in which decisions in policy are made are crucial to the definition of evidence in the moderate model. According to Pinheiro's expression (chapter 1), *the contextual frame* delimits a background made up of epistemological, political, and institutional factors within which the policymaker's decisions regarding the use of evidence take place. In other words, to use or not to use this or that evidence, as well as the weight that will be given, for example, to scientific evidence, will depend on the contextual decision framework of the agent, in which political, symbolic, and ideological factors will always act, latently or explicitly.

To what extent would the construction of contextualized knowledge for the analysis of policies be possible? First of all, any policy should be adjusted to its implementation context, considering the behaviors and reactions of the target audiences. In turn, this adjustment requires the analyst to have a specific cognitive attitude and an openness to the phenomenological apprehension of contextual elements (Lejano, 2006, p. 228 and 252). Finally, one must be able to intuit ways to describe the context in its formal and informal aspects.

Such contextualized knowledge will require using different methods and ways of representing reality. It implies that the analyst must *look into* concrete situations experienced by people. In theory, this type of knowledge seems to be more appropriately achieved with qualitative methods, precisely those highlighted by Bachtold and Robert (chapter 7), Fonseca, Koga, Pompeu, and Avelino (chapter 6), among other chapters in this volume. Qualitative studies can gather a volume of data and information that, once organized and analyzed, can improve knowledge, including causal knowledge, about certain social phenomena. Here, establishing analogies and "Wittgensteinian family resemblances" between different cases can be crucial.

It should be clear that contextual knowledge, briefly characterized in the previous lines, is different from that obtained through statistical analysis, impact analysis, controlled randomized experiments, and mathematical modeling. However, one should try to use these types of analyses – considered more scientific, objective, and rigorous – in a cooperative and intercomplementary way with other methods. Different objects of study will require different methods of producing evidence to guide policy decisions.

3 THE PRODUCTION OF EVIDENCE IS CHARACTERIZED BY METHODOLOGICAL DIVERSITY AND ANALYTICAL APPROACHES

The production of systematic knowledge about reality aims to reach some kind of inference, either of a descriptive or causal nature. We use known facts to build hypotheses and formulate knowledge about something we do not yet know, whose conclusions can later be reviewed and refined (King, Keohane and Verba, 1994). Thus, a modern conception of science points to the existence of various means or methods to access, measure, and know reality. The production of evidence for policies is part of this broader context within the science organization. In analyzing policies and their decision-making processes, an enormous variety of methods and analytical approaches are available to obtain inferences.

This book aims to illustrate this multiplicity of resources for producing inferences with contributions that mobilize qualitative, quantitative, mixed, and experimental studies. Throughout the book, each chapter adopts different methods, as expected from the varied objects of analysis. This multiplicity of approaches, often complementary, signals how research in the field of policy may ideally operate. Moreover, the chapters exemplify the diversity of possible methodological approaches for the same investigative purpose – understanding the meanings, uses, scope, and limits of evidence in policy.

Complementing this diversity, we chose to gather, in section 2, five chapters that refer directly to methodological issues regarding examples of applications in studies about policies. This choice was made because these contributions synthesize methodological aspects that point to contemporary and pressing questions about using evidence in policy.

A first type of empirical evidence is impact evaluation. It constitutes a causal hypothesis test, in which one tries to measure statistically the effects (impacts) of a specific policy intervention based on previously established criteria to corroborate or reject the hypothesis. Moreira and Santini, in chapter 4, emphasize the importance of such evaluations for accountability and to achieve more efficient standards in the use of public resources by municipal administrations in Brazil. The authors show that, in general, there is a huge untapped potential for increasing the efficiency of Brazilian municipal policies, as mayors rarely base their policy decisions on information extracted from academic sources or research institutes. Moreover, field experiments conducted by the authors provide strong evidence that if mayors are well informed, by impact evaluations, that a particular policy is effective (as well as cheap and easy to implement), then they are likely to implement it.

However, policy analysts hardly perform impact evaluations and randomized controlled trials (RCTs) to test long-term interventions and understand policy problems that are highly complex (wicked problems). As Leão and Eyal argue

in chapter 8, in their critical debate about the origins and limits of experimental research, current studies comprehend a second wave of works produced by randomizers, formed by research groups, mainly associated with the area of economics, that overcame political resistance to the randomization of social policies. Using the sociological concept of *hinge*, the authors explain that randomizers and international philanthropic organizations (philanthrocapitalists) have partnered to produce research that tests interventions whose natures are occasional, mostly lasting a month or less. Thus, RCTs have spread in the international scenario not because of the method's intrinsic nature as a *gold standard* but because of historical and institutional circumstances of the recent political and scientific scenario.

In the absence of methods that generate more *objective* evidence, one alternative is using computer simulations, which can be used in several ways to support decision-making. Furtado and Lassance propose this type of evidence production in chapter 5. With the results of such simulations, one can evaluate a priori, with some degree of detail, certain effects of the choices made by policymakers. Thus, some *side effects* of the policy, not foreseen in the design and elaboration phases, may be mitigated by actions that would not even have been considered if the effects of the policy in question had not been computationally simulated. Moreover, different policy options can be evaluated comparatively before any substantive decisions are made and without significant public spending. Among the computer simulation techniques the authors present, there are agent-based modeling (ABM), a bottom-up method that seeks to model the behavior of agents in order to infer the overall properties of the system; big data; machine learning; network analysis; and dynamic stochastic general equilibrium models (DSGEs). Each of these methods has its wide range of applications and can be used, alone or in combination with other methods, for policy analysis.

In turn, in addition to quantitative empirical evidence and computer simulation techniques, ethnographic data and methods can be used as evidence for policy, as Bachtold and Robert show us in chapter 7. Simply put, ethnography is a qualitative method of researching "a particular culture, its values, and its beliefs, through the exercise of continuous observation and detailed description of the native way of life".[6] However, ethnography is not restricted to the technique of participant observation. Closely linked to anthropology, ethnography seeks to understand otherness – the *other*'s way of thinking, being, and doing. By relativizing the ways of life of human groups, ethnography takes on a contextual and critical character. As the authors clarify, this is the method that best "allows for the assimilation of subjective, social, and symbolic factors that are often not understood by other research methods".[7]

6. According to chapter 7 of this book, by Bachtold and Robert.
7. See chapter 7 of this book, by Bachtold and Robert.

Besides focusing on methods and techniques, numerous other ways of conceiving and classifying the evidence used to support and inform policy decisions exist. One of these alternatives concerns the so-called *hybrid evidence*, studied by Fonseca, Koga, Pompeu, and Avelino in chapter 6. Hybrid evidence is derived from the operation of participatory institutions, which, in turn, consist of various forms and arrangements for hearing the voices of citizens and policy stakeholders to take into account their preferences in policies (e.g., forums, conferences, public hearings etc.). The debate of these authors with the traditional literature on EBPPs allows the expansion of the concept of evidence based on new knowledge, rationalities, and *grammars* that emerge from the meetings, debates, and conflicts between the different actors interested in policies. The perspective of Fonseca, Koga, Pompeu, and Avelino in chapter 6 seems to be closer to the *post-positivist* views that, unlike the more traditional strands of EBPPs, reject the separation between the technical and the political and do not exclude a priori values and beliefs, ideology, and personal (more or less subjective) judgments in the analysis of policies.

As one would expect, the chapters gathered in section 2, dedicated to discussing methods and approaches in producing evidence, and even the book as a whole, do not bring together the totality of means to make policy-relevant knowledge. Moreover, hardly a single work will be able to illustrate and bring together the multiplicity of existing methods, as there are countless manuals and reference books for the various methodological techniques and traditions in different branches of knowledge that are constantly being updated and developed. The goal, therefore, was to bring together some recent debates about the challenges and possible gaps involving methodological issues on the use of evidence in policy.

Finally, a debate in permanent dispute attributes hierarchy to evidence and the relevance of this classification for the field of policies. The proper use of science is key to avoiding fallacies in providing input to decision-making. In *The politics of evidence*, Justin Parkhurst (2017) also pointed out this problem, which he called technical bias, defined as using evidence that does not follow scientific principles or best practices.

However, as Parkhurst himself argues in his works and the preface of this book, evidence should be helpful in the decision-making process. That is, we must consider, among other constraints, the time limits and the purpose of its mobilization in policies. Furthermore, the best evidence is not necessarily the one supposedly at the top of a predetermined hierarchy of evidence. In some cases, systematic evaluations and reviews may be necessary; in others, comparing international practices, mapping historical series, or comparing indicators are sufficiently useful. Vieira, Piola, and Servo, in chapter 19, explore the factors that influence the evaluation of technologies for therapeutic purposes by

the National Committee for Health Technology Incorporation (Conitec) in the Brazilian Unified Health System. In addition to the level of quality of evidence on the issues of efficacy/effectiveness, the authors analyze three other factors: the influence of those requesting the evaluation, the stakeholders, and the costs of the technologies. Evaluating a sample of 29 reports of the 141 published by Conitec in 2019 and 2020, based on the grading of recommendations assessment, development, and evaluation (Grade) methodology, the authors conclude that Conitec's recommendations were not always guided, in this period, by the highest levels of evidence, but in conjunction with other factors, including the three mentioned here. For example, the presentation of experience reports on the use of drugs and the high cost of new drugs compared to existing ones were relevant to the evaluations. Despite the recognized advances in health technology assessment (HTA), the study points to the challenges of strengthening and legitimizing Conitec. The case of the Ministry of Health's (MH) orientation, due to political pressure, to use chloroquine and hydroxychloroquine against covid-19 without prior evaluation by Conitec illustrates part of this reality.

In this sense, the key concern for improving the use of evidence for government management shifts from the idea of complying with a hierarchy of evidence to the creation of governance of evidence (Parkhurst and Abeysinghe, 2016; Parkhurst, 2017). With this expression, we aim to problematize an advisory system that enables the mobilization of reliable and technically valid evidence based on decision-making processes that are "inclusive of, representative of, and accountable to the multiple social interests of the population served" (Parkhurst, 2017, p. 8). The challenge posed to Brazil, and other developing nations is to expand quality public services in a polarized context marked by sharp distributional conflicts. This book aims to support this debate, at least concerning the potential of evidence to improve government action.

4 THERE ARE DIVERSE CONTEXTS FOR THE USE OF EVIDENCE IN POLICYMAKING, AND EXPLORING THIS DIVERSITY ALLOWS US TO REVEAL FACTORS THAT DRIVE OR INHIBIT CHOICES AND DYNAMICS OF USE

The moderated model proposed by Pinheiro in chapter 1 invited the authors to recognize and problematize the contextual framework in which evidence is employed. We argue that this exercise expanded the understanding of the possible conditioning or explanatory factors of the choices of informational sources, as well as their dynamics of use.

This book could observe the plurality of contextual frames from different perspectives. We will present three of them that, in our opinion, stand out the most. The first one, illustrated in section 3, but not only, deals with the diversity of spheres and levels of government. Although most chapters in the book were

dedicated to analyzing the use of evidence in the federal Executive branch (chapters 7, 9, 10, 14, 15, 16, 17, 18, 19, 20, 21, 23, and 25), some chapters contributed to the analysis of the context of local government (chapters 4, 11, 26, 27, and 28), of the Legislative (chapter 12) and Judiciary (chapter 13) branches, as well as with approaches that considered the international context of the policy analyzed (chapters 8, 22, and 24).

The second dimension of contextual plurality, portrayed to some extent in the set of chapters in section 5 but also present throughout the book, relates to policy areas. As mapped by Pinheiro (chapter 1) and Faria and Sanches (chapter 3), the historical precedence of the evidence-based medicine (EBM) movement means that the debate on the use of evidence has more accumulation and presence in the health area. However, the emergence of the covid-19 pandemic brought new challenges to governments in all countries and demands for interactions with other policy areas, as the authors well demonstrate in the chapters that dealt with cases in health care (chapters 19, 20, 21, and 28). The specificities of the use of evidence in other policy areas were also analyzed in social policies (chapters 7, 8, 15, and 17), education (chapters 26 and 27), control (chapter 10), management (chapter 16), macroeconomics (chapter 22), infrastructure (chapter 18), environmental (chapter 23), rural productive inclusion (chapter 24), and science, technology, and innovation (chapter 25).

The third dimension of contextual diversity among the chapters deals with the unity of analysis adopted by the studies. While some chapters of the book sought to deepen the perspective of the individual user of evidence (chapters 4, 9, 10, 11, and 13), some chapters offered an organizational-institutional perspective (chapters 12, 15, 18, 19, 20, 23, 26, 27, and 28) and others an integrated view between the two levels of analysis (chapters 16 and 25) or systemic view of the specific field of knowledge (chapters 14, 17, 21, 22, and 24).

In the analysis carried out with federal bureaucrats (chapter 9), *individual factors* proved relevant for the choice of the source of information to be employed by the general sample of bureaucrats at the ministries, namely the level of education, the type of work performed, occupation of higher positions and assignment in the Federal District. In addition, Jannuzzi (chapter 15) emphasizes the importance of bureaucrats' knowledge in the use of statistics and the formulation and evaluation of programs to develop better evidence-informed federal policies against hunger and poverty. Also, among individual factors, Bachtold and Robert (chapter 7) add the ability to translate knowledge as an inducer or facilitator for the greater permeability of specific sources such as ethnographic research. Likewise, several chapters recall the teachings of constructivist studies about the influence of ideas, values, and judgments carried by individuals in their choices and actions (chapters 1, 2, 13, 14, 16, 17, 20, 21, and 24). Moreover, as Saguin (chapter 2) and Vahdat, Favareto, and Favarão

(chapter 24) discuss, actors' cognitive biases frame public problems and, therefore, limit the choice of evidence sources.

Four studies in the book were based on survey data from bureaucrats (chapters 9, 10, 11, and 25). Although chapter 9, elaborated by Koga, Palotti, Lins, Couto, Loureiro, and Lima, and chapter 11, produced by Machado, Sandim, Alves, Motoki, and Vivas, pointed to very close preferences in the general context of federal bureaucrats of the direct administration and the Federal District Government (GDF), respectively – in which the use of scientific sources would be less frequent than the use of state and experiential sources –, when we take a closer look at more specific contexts, as performed in the other two chapters (chapters 10 and 25), relevant variations could be identified.

On the one hand, Oliveira and Menke (chapter 10) indicate an even higher use, if compared to the general sample of federal bureaucrats, of state sources among the auditors of the Office of the Comptroller General (CGU), who produce control recommendations, a relevant source of information among the federal bureaucracy in general. In another direction, Schmidt, Bin, Pinheiro, and De Negri (chapter 25) portray the context of bureaucrats in the Ministry of Science, Technology, and Innovation (MCTI), which points to an intense use of information from scientific production and experience to the detriment of most state sources, except for laws and regulations and administrative records.

In fact, exploring the differences between the contexts allows us to hypothesize about the factors that induce and inhibit the use of different sources of evidence. From the four cases mentioned, we can reaffirm that individual factors are relevant, such as the greater or lesser use of scientific evidence depending on the type of work performed and the educational level of the bureaucrat. However, the prominence of the use of regulations and administrative registries in the same four cases suggests explanations from other levels of analysis. In this sense, in addition to the cases mentioned above, we identified contexts such as the formulation and implementation process of the Gov.br platform, in which, as demonstrated by Filgueiras, Palotti, and Nascimento (chapter 16), sources of various kinds, such as recommendations from international organizations, research with users of public services, and academic studies, are used jointly.

Regarding *organizational and institutional explanatory factors of evidence use*, several considerations were raised by the authors, such as the implications of changes in administrative resource flows of personnel and budget for the maintenance of evidence use capacity (chapters 23 and 25); the effectiveness and legitimacy of the instruments of mobilization and use of evidence, as discussed by Vieira, Piola, and Servo (chapter 19) and Fernandez (chapter 20), regarding decisions in health policies; as well as in the case of the regulatory process of the Brazilian National Electric Energy Agency (Aneel), presented by Martins, Sanches, and Pinheiro (chapter 18).

Besides these factors, there are also the challenges of institutionalization of consulting instances and of translation of scientific knowledge, problematized both by Segatto, Santos, Alves, and Peria (chapter 26), in the case of the Office of Evidence of the São Paulo State Secretary of Education, and by Moraes (chapter 28), regarding the state instances recently created to face covid-19. In this same scope, the effects of the design of institutional arrangements for policy implementation were debated, such as the centralization of decision-making, brought in the discussion by Ceneviva, Andrade, Koslinski, and Núñez (chapter 27) on Escola em Foco, from the city of Rio de Janeiro, and the effects of the institutional culture formed in the field of productive inclusion policy debated by Vahdat, Favareto, and Favarão (chapter 24).

Finally, several studies brought up *relational and systemic factors* that were suggested as drivers or inhibitors to using different sources of evidence. These factors concern not only the isolated performance or structuring of State entities, be they bureaucrats or organizations, but also the effects of the formal or informal interactions they establish with entities from policy communities and epistemic communities from the knowledge fields concerned. The comprehensive analysis prepared by Schmidt, Bin, Pinheiro, and De Negri (chapter 25) in the field of science, technology, and innovation (ST&I), a structuring area for the configuration of the production capacity of scientific knowledge of a country, reveals different facets of the relationship between demand and supply of evidence. Besides the existence of policy incentive instruments (grants-in-aid, credit, and tax incentives) and policy evaluations, as well as the high capacity of bureaucrats working in the field, the study points out the importance of creating an institutional environment that facilitates access to information and allows the best use of evaluations for monitoring and improving policies. Despite the favorable trend with initiatives such as the Council for Monitoring and Evaluation of Policies (CMAP), the authors conclude that measures in this respect are still scarce and that the results of recent actions are yet to be studied.

Other essential reports were produced about the fruitful relationship between state bodies and institutions, such as the Brazilian Institute for the Environment and Renewable Natural Resources (Ibama) and the National Institute for Space Research (Inpe), in chapter 23; the Brazilian Institute of Geography and Statistics (IBGE), Ipea, and the Ministry of Citizenship, in chapters 15 and 17; the Ministry of the Economy (ME) and the University of Brasilia (UnB), in chapter 16, in which different interactional dynamics are established over time for the joint production of knowledge and mutual strengthening of capacities. On the other hand, interactional challenges are also problematized, such as the influence of international organizations in the narrative of the hierarchy of evidence (chapter 8) and the difficulty in recognizing and absorbing society and beneficiaries' voices and perceptions about problems and public measures (chapters 6 and 7).

Extrapolation of interactional elements to a systemic-structural level is suggested in all the papers when they address issues such as the justification structure of the Brazilian State tied to a rational-legal authority regime (chapters 9 and 14), the role of conflict in the use of evidence in the Chamber of Deputies (chapter 12), the democratic issue and societal pressure in the reception of diverse knowledge (chapter 6), the resistance of the epistemic community to recognize new empirical evidence that challenges the dominant theory, as demonstrated by Fiani in macroeconomics (chapter 22), and the various forms of refusal or omission of the use of scientific knowledge exposed even in the health field in which institutional arrangements and capacities have been constituted for longer (chapters 19, 20, 21, and 28). As well argued by Soares (chapter 21), both the process of accepting evidence and declaring ignorance, acknowledging the existence or absence of knowledge, depends on the historical and social context in which the two facets imbricate. Likewise, they can encourage or inhibit scientific development. In the case of the Brazilian Health Regulatory Agency (Anvisa) evaluation of the use of cannabis for medicinal purposes, the author portrays the social pressure and activism of families that confronted the historical context of the cannabis prohibition regime and influenced the regulatory agency's decision-making process.

In designing the contextual frame to understand the use of evidence for policy, the thematic (policy area), interactional, and systemic dimensions merge in chapter 22, authored by Ronaldo Fiani. The author presents an overview of the use of evidence in macroeconomics, focusing on the complex relationships between empirics, theory, and policy in this field. Furthermore, he does not forget certain generically *cultural* or *sociological* factors. To this end, Fiani briefly describes the history of ideas in the so-called mainstream of economic science, from the 1930s to the present day, with emphasis on the debate between different schools (Keynesian and New Classical) and the consequences of this debate on the way economists relate empirical evidence, theory and macroeconomic policy (monetary and fiscal). Supported by authors such as Summers (1991) and Romer (2016), Fiani argues that mainstream participants in economic science deal with a macroeconomic theory whose relationships to empirical evidence are somewhat problematic. The reasons for this are the increasing complexity of the statistical techniques needed to corroborate hypotheses and the "lack of generally accepted protocols on how scientifically appropriate to use these statistical techniques to corroborate a theoretical proposition".[8] Consequently, the definition of which macroeconomic policies would be the most appropriate for certain objectives becomes less dependent on the evidence itself and more on other factors, such as the mathematical sophistication of theoretical models and/or the academic authority of those who propose and test these models. Chapter 22, therefore, sheds new light on the complexity

8. According to Fiani in chapter 22 of this book.

of the interactional and systemic factors that condition the contextual frame of evidence use in an epistemologically *mature* policy area. In this sense, Fiani's work may inspire studies on the same topic in other policy areas.

In dialogue with Saguin's analytical model (chapter 2), we argue that a good part of the factors raised in the chapters of this publication is in the realm of the so-called policy capacity, that is, skills, competencies, and resources needed to perform the various functions of policy, accumulated and flowing at the individual, organizational, and systemic levels. We also highlight that, although the international literature on public policy has this dimension of capacities at its core, little is discussed in the national literature on the *analytical capacity* developed or to be developed in the Brazilian State – that is, the skills and resources needed for the identification, appropriation, use and production of knowledge – aimed at defining and implementing public actions.

In this sense, we emphasize that pioneering contributions are brought by this collection of chapters that, besides registering the current stage of the analytical capacity of various entities and areas of public policies, present a general diagnosis of the development and accumulation of state analytical capacities in recent decades, either by recruiting and operating highly qualified bureaucracies, or by initiatives of institutionalization of units and organizational arrangements specialized in the absorption, translation, and production of knowledge (chapters 9, 10, 11, 14, 15, 16, 18, 23, 24, 25, 26, 27, and 28). It is imperative, however, to highlight the threat of dismantling these capabilities identified in several of the chapters, as by Araújo in environmental management (chapter 23), Jannuzzi in the governmental statistics system (chapter 15), and Fernandez in health (chapter 20). Therefore, we advocate that this research agenda should be continued and deepened to understand the effects of the mobilization or demobilization of the state's analytical capacities on the production of Brazilian policies.

5 THE STATE IS NOT ONLY A USER OF EVIDENCE AND ACTS DIRECTLY IN THE PRODUCTION OF DATA AND INFORMATION ADOPTED TO SUPPORT THE POLICYMAKING IN BRAZIL

Allied to the polysemic perspective adopted as a reference to conceptualize evidence presented in the previous sections, we also propose an inflection focused on shifting the view of the State apparatus as a user of evidence to the role played by its constituent instances in the production of evidence. More than incorporating evidence produced by actors outside the State sphere, public organizations, their administrative units, and technical staff produce, systematize, and consolidate information used in different phases of the policymaking process in the form of technical notes, administrative records, follow-up and monitoring systems, policy evaluations, reports from control bodies, legal opinions and norms, information

collected from beneficiaries, among others, as indicated by different analyses contained in this book (chapters 7, 10, 14, 15, 16, 17, 18, and 23).

As already mentioned, based on surveys applied to public civil servants, Koga, Palotti, Lins, Couto, Loureiro, and Lima (chapter 9) and Machado, Sandim, Alves, Motoki, and Vivas (chapter 11) point out the prevalence of state sources, produced within the state scope, and experiential sources, linked to individual trajectories and experiences as the informational references most used by the bureaucracy to support its activities and functions. The chapters gathered in section 4 of the book illustrate how state structures have acted as producers of evidence and how this informational pool, in the words of Jannuzzi (chapter 15), has been crucial at different moments of policy production. These chapters address important aspects for thinking about the possibilities of incorporating evidence as valuable sources of support for bureaucratic and managerial action and point out relevant challenges for the qualification of this informational framework and expansion of its uses.

Based on the cases of state production of evidence analyzed, it is possible to highlight some points of convergence. Particularly, the diversity of formats assumed by state sources and the multiple purposes of their use in preparing diagnoses, designing policies, outlining public interventions and their implementation strategies, besides their use in follow-up, monitoring, and evaluation routines, as well as in inspection and control activities (chapters 7, 10, 14, 15, 16, 17, 18, 23, 24, 27, and 28).

It is also evident how the existence of administrative and managerial units focused on data governance contributes, in line with efforts to provide qualifications and changes in organizational culture, to incorporating internal and external evidence in the routines and activities that support government action. These instances operate both as knowledge brokers, in the absorption and translation of evidence produced outside the State, and as producers and disseminators of internal sources of evidence, within the government apparatus itself (chapters 9, 10, 11, 14, 15, 16, 18, 23, 24, 25, 26, 27, and 28).

Despite permeating the routine organization of governmental action daily and providing elements for decision-making at different moments of the policymaking, internal sources are still little addressed in analyses on the use of evidence by the public sphere. The underutilization or non-recognition of these data as evidence is mainly due to the administrative-operational nature attributed to this type of information, almost always produced within the governmental bodies and primarily used by public managers and leaders responsible for conducting the policies developed by governments, as indicated by Mello in chapter 14, when dealing with the use of administrative records as evidence in public policies.

However, the discussions carried out by Jannuzzi (chapter 15) and Koga, Viana, Couto, Goellner, and Marques (chapter 17) explain, for example, how policies for social development and poverty alleviation have been grounded on a robust set of data coming both from public statistics under the responsibility of the IBGE (Census, National Household Sample Survey – PNAD, and Municipal Basic Information Survey – Munic) and administrative records, especially the Single Registry for Social Programs of the Brazilian government (Cadastro Único), to establish policy targets, operationalize the granting of benefits, and monitor the performance of interventions and improvements in socioeconomic indicators.

These and other analyses show how evidence and policies are inscribed in a process of feedback dynamics, to the extent that government action constantly demands new information that, in turn, become elements that induce changes in the work agendas of evidence-producing institutions. Changes in the form of collection, measurement, scope, coverage, and format of questionnaires, the inclusion of new themes, and public hearings are examples of how the State production of evidence has become increasingly able to meet the growing demands of government bodies for more accurate and appropriate information to fill information gaps and guide government action in all its complexity (chapters 15 and 17).

Shorter response times and greater flexibility in the construction of data collection, consolidation, and processing instruments give domestic sources an essential advantage in their applicability to public policies.

State sources also hold a great advantage when compared to other data as they have more significant potential for articulation and dialogue with the immediate needs of public policies in their various management and execution processes, in addition to containing a semantic similarity with terms and concepts adopted by bureaucracies, thus enhancing the applied character of this information. Moreover, State sources tend to speak the same language as the managers involved in the operationalization of public policies, reducing costs of incorporation, and institutionalization of mechanisms aimed at the use of evidence in different stages of government action (chapters 10, 16, 18, 23, 26, and 27).

In addition, some types of internal sources are capable of providing data on population and regions of service provision, deliveries of goods and services, eventual gaps in coverage, or even overlapping of efforts, when we think of administrative records and follow-up and monitoring systems (chapters 14, 17, 23, 26, and 27). They can also be used as parameters for granting benefits, besides presenting data on specific situations, such as census and labor data, among other demographic and socioeconomic information contained in public statistics, for example (chapters 15 and 17).

Despite the potential of State sources as evidence capable of improving government action, two warnings must be made about the limits to which this information is subject.

First, the degree of institutionalization of instances and mechanisms aimed at fostering the use and production of evidence varies greatly among bodies and institutions. It is strongly linked to managers' greater or lesser participation in efforts to enhance evidence and strategies to qualify the data to be used in government action (chapters 7, 10, 18, 19, 20, 23, 26, 27, and 28).

Secondly, the State production of evidence, as in other areas of knowledge production, does not occur in institutional vacuums and is configured by interests, values, power correlations, and material and symbolic disputes. As discussed in different chapters of this book, the use and production of scientific, State, and experiential evidence is marked by the contextual framework in which they are inserted, according to Pinheiro (chapter 1). Thus, the analyses of the dynamics of use and production of evidence cannot disregard the political dimension that permeates knowledge construction and legitimation processes of the State's actions.

In line with the arguments already developed in previous sections, evidence, as part of the constitutive elements of policy production, can affect how rules, standards, requirements, and/or criteria with the potential to guide, define, restrict, or encourage behaviors are incorporated into policy design. They can contribute by strengthening certain constructed frames of reference about specific issues, problems, or audiences. Evidence can also play an important role as an instrument through which governments and other actors in the public sphere can classify and regulate spaces, subjects, and objects that can be governed. State sources contribute to giving materiality to issues and themes. They operate by constructing senses and meanings that emerge from the multiple structures that constitute the state apparatus and take their place in the dispute with interpretations produced outside the State sphere about not only the policies and programs implemented but also the reasons and motives mobilized to justify State action in certain directions to the detriment of other possibilities.

6 THE PARADOX OF KNOWLEDGE USE: DIVERSITY OF USES AND INTERMEDIATION OF EVIDENCE BETWEEN EPISTEMIC COMMUNITIES (THE ACADEMY AND PUBLIC MANAGEMENT)

One explanation for the so-called paradox of knowledge utilization, discussed in section 2 of this presentation and chapters 1 and 2 of this book, would be the *two-communities theory* (Caplan, 1979). Despite the increasing production of data and scientific knowledge, empirical work in several countries (Cherney et al., 2015; Veselý, Ochrana and Nekola, 2018) – to which chapters 9, 10, and 11 of this book

also refer – reveals a low instrumental use of scientific knowledge by governments. According to part of the EBPPs literature, such a fact would stem from about the development of the scientific and the public management fields as two separate communities, with distinct and sometimes even incompatible incentives, times, procedures, and logics (Caplan, 1979).

However, as raised by Saguin in chapter 2, more recent studies have been challenging such theory by suggesting redirecting the focus of analysis from the reasons for low instrumental utilization to understanding other types of uses of scientific knowledge and the interaction between the two communities when they occur (Amara, Ouimet and Landry, 2004; Newman, Cherney and Head, 2016).

The literature on public policy brings in its origin the debate about the relevance of applying scientific knowledge to the steer government actions. In this debate, authors such as Weiss (1979) have warned for decades about the importance of recognizing that research and scientific evidence can be used for various purposes. Besides the linear and unidirectional instrumental use between the demand for the solution of a pre-defined public problem and the provision of empirical evidence to solve it, as advocated by EBPP, other types of utilization are clearly observed in the daily life of the policy maker.

The set of studies in this book indeed brings contributions to the identification and problematization of the instrumental use of evidence, raising potentialities and challenges of its appropriation and application in several stages of policy production, such as in the definition of the target audience (chapters 14, 17, and 24), in the composition of guiding diagnoses (chapters 6, 14, 15, 16, and 17), in agreeing on commitments to government action (chapter 15), in defining state interventions (chapters 4, 5, 11, 19, 20, 21, and 28), in following up and monitoring (chapters 14, 15, and 24), in supervising and controlling (chapters 10 and 14), and in evaluating the management and the impact of interventions (chapters 4, 6, 7, 8, 13, 14, 15, 22, and 24).

However, even in these chapters, it is possible to notice not only the instrumental use but also what Weiss (1979) highlights as conceptual or *enlightening* use, which the author argues would be of greater value to policymaking if compared to the instrumental. In conceptual use, it would not be a study or a set of systematized studies that would directly affect a policy but rather the diffuse access of a group of informational resources, including scientific ones, that would sensitize decision-makers to new perspectives and approaches to frame problems and policy solutions. That is to say, for example, in the cases mentioned above, the diagnosis survey, together with the continuous follow-up, monitoring, and inspection can generate a pool of knowledge for the policymaker that, at specific moments, leads to a particular decision.

Besides the instrumental and conceptual use, other types of applications could be found in the chapters, such as the study developed by Almeida (chapter 12), which highlights the inevitability of the political-strategic use of scientific evidence in the parliamentary debate, given the plurality of interests to be represented and the informational asymmetries in the Brazilian democratic context. In turn, the study by Nascimento and Dias (chapter 13) analyzes the tactical use of statistics in the intra-bureaucratic clashes of the lower courts, in which this type of evidence is mobilized to criticize, represent, denounce, and affirm structural inequalities. The same tactical use can be recognized *on the other side of the coin*, as presented by Soares (chapter 21) in the original analysis on the use of ignorance in the debate over Anvisa's regulation of cannabis for medicinal use. Moreover, chapter 16, about the Gov.br platform, and chapter 17, about the Single Registry for Social Programs, describe the reflexive relationship between managers and scholars that would fit more to an interactive model of use under the terminology of Weiss (1979).

When we look at the interactions between the two so-called communities (public administration and academia), we notice that the boundaries between producers and users of knowledge are not so uncontested or even remarkable. As well developed in Mello's argument (chapter 14) and explained in section 5 of this presentation, the Brazilian State is an essential producer of knowledge used to support its own actions and the scientific community and society in general. In fact, it should be considered that part of the bureaucracy, when seeking academic training and performance, can simultaneously integrate the academic-scientific community and that of public administration (chapters 9 and 11). Moreover, as already mentioned in section 4 of this presentation, several chapters presented interactions between management and the academy, both at individual and institutional levels, that did not result in the mere direct transfer of knowledge. Instead, they promoted the joint construction of knowledge (chapters 15, 16, 17, and 23).

As explored in the knowledge brokerage literature, one has to consider that bureaucracy and public organizations do not use the various sources of knowledge only directly and hermetically. And here, we are not referring only to scientific knowledge but also knowledge from other sources, such as the one produced by policy stakeholders, participatory instances, media, and beneficiaries' opinions. Often, bureaucrats and public organizations select, transform, translate, redistribute, reshape, transmit, and produce knowledge in a formal or informal interaction with producers of these sources. In this sense, besides the analytical capacity already mentioned in section 3 of this presentation, one must also consider the interactional capacity that guarantees the State the permeability of the knowledge produced by the various sources of evidence.

However, given the considerable prominence of multiple State sources in bureaucrats' routines identified in some of the chapters of this book (chapters 9, 10, 11, and 12), we emphasize the importance of further studies on the dynamics of production of these sources, to deepen our understanding of the informational flows and chains of the Brazilian State. For example, are State sources (such as regulations, technical notes, statistics, information registries, operational audits, legal opinions etc.) intermediaries of knowledge capable of absorbing the production of other sources and translating them into bureaucratic language and practices, or are they stabilizers of endogenous knowledge with low external permeability?

As the moderate evidence perspective and studies in the field already defend – including several in this book – the production of policy can benefit significantly from technical-scientific inputs, but without disregarding the political dimension inherent in the process of policymaking in a republican and democratic regime. Therefore, in seeking to protect the analytical capacity of the State against attacks such as those of the anti-science movement, we believe that it is fundamental, and not contradictory, that such analytical capacity be allied to an interactive capacity aimed at the political, epistemic, and cognitive openness of the State. We believe that this is the only way to guarantee the production of effective but also plural and legitimate public policies.

7 FINAL REMARKS

In this presentation, we seek to reflect on the analytical plurality and the methodological and empirical richness of studies produced by the authors of this book. Several themes and issues deserve to be raised for future research agendas, either due to the reflection of the chapters as a whole or because they could not be covered in this already extensive work. However, we highlight two themes that emerge from the dialogue with the preface written by Parkhurst regarding the location of the publication in the international debate on evidence for public policies. While the first is an exploratory proposition, the second seeks to contribute an agenda of applied recommendations.

To answer the questions "what should be considered good evidence for policymaking?" and "what does it mean to use evidence in a better way?" in the case of Brazil, we understand that it is necessary to jointly advance in understanding whether there is a specifically Brazilian way of using evidence in public policies. This publication brings, in our view, the first steps in this direction. However, although we have sought a broad coverage of the plurality of contextual frames of evidence use, we recognize that this is an ongoing and cumulative exercise. Therefore, analyzing policy areas that have not yet been explored, such as justice and public security, deepening the dialogue with the field of Brazilian state formation studies,

as well as producing comparative studies between different national contexts and between other countries, will undoubtedly bring a more comprehensive and more precise diagnosis of the dynamics of evidence use in the country.

Equally highly relevant is the question of which institutions should be created to guarantee the use of the best evidence in the best ways, that is, good governance of evidence. It is indeed a subject of scarce production in Brazil. We consider that it relates to the exploratory agenda previously mentioned. Nevertheless, it still demands greater interlocution and densification with other fields of knowledge that have already produced consistent theoretical frameworks on topics such as the functioning of public bureaucracies and organizations (Lopez and Praça, 2015; Palotti and Cavalcante, 2019; Pires, Lotta and Oliveira, 2018), state structures and decision-making processes (Vaz, 2018), the relationship between science, technology, and society (Haraway, 1988; Latour, 1994; 1997; Latour and Woolgar, 1997), power and democracy (Figueiredo, 2007; Figueiredo and Limongi, 1999; Limongi and Figueiredo, 2009; Pateman, 1970; Mansbridge et al., 2010; Mouffe, 2008), among others.

In addition, more empirical studies seeking to monitor and evaluate the results of initiatives created to promote the use of evidence in Brazil, such as the CMAP, coordinated by the ME; capacitation, evaluation, and organization of evidence, of the National School of Public Administration (Enap); the initiatives of production and communication of evidence, of Ipea, will be of great value to this discussion; as well as the cases mentioned in this book of the Office of Evidence of the São Paulo State Education Department; the Secretariat for Evaluation and Information Management (Sagi), of the former Ministry of Citizenship; and the regulatory impact evaluations and scientific committees of covid-19, to be just a few examples at the State level, without disregarding the countless initiatives from the society that have emerged in the last decade.

This is a research agenda that is unfolding in the national territory and that challenges us. We hope that this publication will contribute to arouse the same feeling among public managers, researchers, and those interested in the theme of the use (and non-use) of evidence in public policies.

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