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## Implementation of Brazil's energy policy through the national oil company: From institutional chaos to strategic order



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#### ABSTRACT

This study aims to understand the implications for strategy and organizational structures of state-owned enterprises (SOEs) facing chaotic events. Applying chaos theory, this case study focuses on Petrobras, a listed corporation controlled by the Brazilian government, in its role of implementing the national energy policy. The main findings of semi-structured interviews show that the slump in oil prices in 2015 associated with a corruption scheme in the company led to institutional and organizational chaos. Recent events led to Petrobras' internal reorganization in favor of the national market instead of internationalization. Nowadays, strategic management policy is the board of directors' primarily responsibility, and without political interference at the organizational decision-making level, Petrobras can be a social and economic policy tool while achieving its own financial goals. SOEs can make strategic decisions that allow facing chaotic events, thus restoring the internal equilibrium. Finally, the political will to define institutional rules leading to improved corporate governance is essential for successful organizational achievements.

#### 1. Introduction

What shall we do, and, how shall we arrange our lives? (Weber and Mills, 1946: 152). Decision-making and policy implementation are key elements of the governing process (Osborne, 2017). The former involves political accomplishments through the understanding of which policies need to be undertaken in order to reach political, economic and social goals'. The latter it includes the organizational arrangements available for successful policy implementation, namely through private sector participation and/or public-sector organizations' involvement (the executive branch; state-owned enterprises; among others). In this particular and regarding the organizational arrangements for policy implementation, a theoretical discussion exists (Bel et al., 2010) regarding private sector participation in light of the New Public Management (NPM) assumption, i.e., that private sector organizations perform better than their public counterparts, the reason why they should be chosen for policy implementation whenever possible (Pollitt, 1990). However, NPM's beliefs have not been proven, namely that private firms' are associated with better performance, such as economic and operational gains that once reached will favor social development (Bel and Warner, 2008; Warner, 2011). Regarding public sector organizations' involvement in policy implementation, they have been criticized due to their slowness to respond to instable or turbulent environments (see Osborne, 2010).

However, state-owned enterprises (SOEs) are in many cases becoming more reliable organizational solutions to implement policy programs. In particular, academics in general and policymakers in the private and public sectors are increasingly studying SOEs, which can be defined has legally separate companies under government control through ownership of all or the majority of the voting capital (Cuervo-Cazurra et al., 2014). The increasing interest in these organizational arrangements is due to the position these firms occupy in the Fortune Global 500 (Cuervo-Cazurra et al., 2014). They are estimated to be responsible for 10% of global gross domestic product. Nevertheless, they have not attracted commensurate attention from management researchers (Bruton et al., 2015), especially when facing chaotic events.

The discussion about which arrangement will be selected for policy implementation is even more relevant when it is acknowledge that the

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H.C. Silvestre et al. Energy Policy 119 (2018) 87-96

past five decades have certainly witnessed a change in the institutional conditions where organizations perform (Paz, 2014). An example is the 2008 economic downturn that started with the failure of Goldman Sachs in the United Sates and spread worldwide (Florio, 2015). In fact, some commentators argue that chaotic events are more frequent and troubling than in the past (Farazmand, 2003). However, changes can lead to new strategic opportunities as well as institutional and organizational chaos (Holzer and Kasymova, 2012). Thus there is a need for political and organizational solutions to restore equilibrium, something that can arise from policy resolutions based on the chaos leads to order principle. From an academic approach, chaos theory relies on the assumption that institutional disorders are common, so solutions are required to restore order. In addition, this approach also focuses on the analysis of chaotic events in relationship with organizational and management theories (Farazmand, 2003). Chaos theory's assumption is that systems are dynamic in nature. Such dynamism can arise with new events and concomitantly have different responses from different actors to particular demands. In that way, events and organizational reactions are not linear, so this approach can help to better understand the emergence of distinct response patterns. Most importantly, such responses can focus on several areas, including business strategy (Levy, 1994).

Recognizing that governments have always been pressed to improve citizens' wellbeing, Weber's research question is a central concern in this study. For that reason, this study aims to understand how Petrobras underwent strategic business changes to reach financial balances while implementing a public policy in a sector that faces common chaotic events. Thus, this study applies chaos theory to understand the strategic and organizational changes in a specific SOE, the Brazilian national oil company, Petróleo Brasileiro S.A. (Petrobras). This theory has been applied in several disciplines, including economics (Faggini and Parziale, 2016), marketing (Hibbert and Wilkinson, 1994) and psychology (Prvor and Bright, 2003). However, with few exceptions, it still lacks application to organizational and business studies (Farazmand, 2003), especially when considering the resource policy field, seen as crucial for social and economic development (Jefferson, 2014). In that particular, it is crucial to understand the implications of strategy and organizational structures for SOEs (Adams and Stewart, 2015) operating in the oil sector, since it is a strategic sector for the economy and government of each country (van Moerkerk and Crijns-Graus, 2016). According to Bruton et al. (2015), knowledge of SOEs' strategy and corporate governance needs to be sophisticated, especially when applying a contextual theory.

This manuscript is organized as follows: first, the literature concerning chaos theory is discussed; then internal and contextual factors for SOEs are presented and debated, ending with the information regarding the existing scenario for Petrobras. After that, the research design and methodological options are detailed. Last, the results and conclusions are presented.

#### 2. Chaos theory: origins and principles

The discussion about the relationship between organizational studies with the surrounding environment has its roots in the general systems theory proposed by Bertalanffy (Fitzgerald, 1999). In this particular case, organizations are considered as living organisms that are subject to complex environmental factors. If one aims to fully understand the way that organizations perform, it is necessary to include all factors in the analysis, without ignoring scrutiny of the core aspects, especially the ways organizations react to external influences. In a sense, system theory's main concern is the stability and equilibrium between contextual factors, the reason why environmental factors play such a crucial role (Hieronymi, 2013).

With a different approach to the study of organizations, chaos theory aims to understand how chaos and order happen and ultimately lead to changes both in the environment and organization (Farazmand, 2003). Based on Lorenz's work, the starting point relates complex and dynamic systems facing unpredictable (nonlinear) events (Levy, 1994). According to chaos theory, organizational action and structure can influence both the environment and the company (Levy, 1994). It is possible to establish a pattern of factors that lead to instability, but answers are hard to standardize since organizations and their human capacities vary. For that reason, Farazmand (2003) supports the idea of emerging theoretical models capable of dealing with chaotic situations. Besides the classic studies, flexible structures need to be understood to allow organizational responses to nonlinear events. Hence there is a need to understand the connection between chaos (arising from calamities and consequently ruptures) and order (arising from the system's balance).

In fact, "there is no single definition of chaos theory" (Farazmand, 2003: 348). Nevertheless, it is recognized that systems need to deal with what is known as bifurcations, i.e., when faced with changing events, systems face unstable occurrences that can lead to chaos (Gauthier, 2009). Assuming the existence of ongoing events that can lead to chaos, this approach's major concern is to formulate preventive/ corrective organizational actions to anticipate ruptures and respond to them. Initial conditions are keystones to prevent the system from falling apart, but those initial conditions are not equal for all systems and circumstances (Adams and Stewart, 2015). Furthermore, systems are dynamic and are assumed to be unpredictable (Pryor and Bright, 2003). Still, patterns can be identified and ways can be found to prevent or ameliorate chaos in the short term<sup>1</sup> (Faggini and Parziale, 2016). In that sense, internal forces can play a major role when organizations are facing chaos. When in the presence of changes, organizations have the capacity to reorganize themselves, whether by procedures or structural changes (Adams and Stewart, 2015). That is the reason why chaos can lead to order and "chaos means order with no predictability" (Faggini and Parziale, 2016: 54).

In that regard, 'attractors' will define the ways a particular system will operate. Further according to Pryor and Bright (2003), several attractors can be identified, all of which have in common actors' behavior. Those actors are central pieces of organizational responses to environmental changes, and their acts can change organizations and the environment where they are performing (Farazmand, 2003). Changes can arise in several ways, such as through the application of business strategy (Levy, 1994), which can have a major influence both on organizational structures and industries. For those reasons, analysis of SOEs is justifiable, since governments can influence institutional settings and public sector organizations' corporate governance, thus influencing policy implementation.

#### 3. State-owned enterprises: evolution and contextual factors

In the public sector sphere, the last century was noted for the emergence of the NPM paradigm. After being introduced in the United Kingdom and United States, managerialism spread around the world aiming to make governmental activities subject to market discipline, namely through private sector participation in policy implementation (Savas, 2000). Private sector involvement in policy implementation became a response to inefficient and ineffective public service provision, because traditional public administration, the *bureaucracy*, rarely accomplished policy goals effectively and timely. According to Osborne (2006), traditional public administration is afflicted by the negligence to users' needs. Such behavior can be partially explained by the lack of competition for policy implementation, which ultimately leads to lack of incentives to improve such services. Without competition, business and strategic management are not a primary concern among public administrators. Instead, following public law rules becomes a primary

 $<sup>^{1}</sup>$  A long-term pattern is hard to identify since systems behave in different ways over time (Hibbert and Wilkinson, 1994).

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