

## **The role of dynamic capabilities on the effectiveness of organizational changes in public sector**

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## **The role of dynamic capabilities on the effectiveness of organizational changes in public sector**

### **Structured abstract**

**Purpose** – Governments worldwide have used administrative reforms to align public organizations with the needs of their key stakeholders. However, despite successfully implementing, they do not consistently achieve the desired organizational performance. This paper explores the relationship between the implementation of administrative reforms and the performance of public organizations seen from a comprehensive perspective. For this purpose, we analyze the mediation role of three crucial dynamic capabilities.

**Design/methodology/approach** – This research used a survey-based methodology. Structural equation modeling was used to analyze the data obtained from a sample of public officials and managers working in public organizations in the State of Ceará (Brazil).

**Findings** – Results of this study suggest that dynamic capabilities can have a decisive role in implementing government policy proposals and helping public organizations align their outcomes with stakeholders' needs. In addition, they indicate the existence of two levels of capabilities and identify a road map for their implementation.

**Practical implications** – From a practical point of view, by identifying these capabilities and their interrelationship, this study provides a roadmap to reduce the complexity of their use and help managers of public organizations deliver desired outcomes relating to the quality of individual and collective stakeholders.

**Originality/value** – This study makes important contributions to literature, enabling scholars and practitioners to see the result of government policy proposals beyond the efficient use of public resources. It shows the role of dynamic capabilities as mediation instruments for changing public organizations, which can be used in administrative reform implementations and continuous improvement processes. Finally, it provides empirical research on the interaction between the three dynamic capabilities in the context of public organizations, differentiating these capabilities into two levels, which provides a road map for their implementation and development by public managers.

**Paper type** – Research paper

**Keywords** – Administrative reforms; Organizational capabilities; Dynamic capabilities; Organizational performance; Organizational change; Public sector.

**JEL classification:** D02, H11, H83.

**Management area** - Strategic and Public Management

**O papel das capacidades dinâmicas na eficácia das mudanças organizacionais no setor público**

## **Propósito**

Os governos de todo o mundo têm usado reformas administrativas para alinhar as organizações públicas com as necessidades de seus principais interessados. Entretanto, apesar da implementação bem-sucedida, elas não atingem consistentemente o desempenho organizacional desejado. Este estudo tem como objetivo analisar a relação entre a implementação de reformas administrativas e o desempenho das organizações públicas, visto de uma perspectiva abrangente. Para este propósito, analisamos o papel de mediação de três capacidades organizacionais cruciais.

## **Metodologia**

Este estudo utiliza uma metodologia baseada em questionários. Foi utilizada modelagem de equação estruturais para analisar os dados obtidos de uma amostra de funcionários públicos e gerentes que trabalham em organizações públicas no Estado do Ceará (Brasil).

## **Resultados**

Os resultados deste estudo sugerem que as capacidades dinâmicas podem ter um papel decisivo na implementação de propostas de políticas governamentais e ajudar as organizações públicas a alinhar seus resultados com as necessidades das partes interessadas. Além disso, eles indicam a existência de dois níveis de capacidades e identificam um roteiro para sua implementação.

## **Implicações práticas**

Do ponto de vista prático, ao identificar essas capacidades e suas inter-relações, este estudo fornece um roteiro para reduzir a complexidade de seu uso e ajudar os gerentes de organizações públicas a obter os resultados desejados em relação à qualidade das partes interessadas individuais e coletivas.

## **Originalidade**

Esta estudo faz contribuições importantes à literatura, permitindo que acadêmicos e profissionais vejam o resultado de propostas de políticas governamentais além do uso eficiente de recursos públicos. Ele mostra o papel das capacidades dinâmicas como instrumentos de mediação para mudar as organizações públicas, que podem ser utilizadas em implementações de reformas administrativas e processos de melhoria contínua. Finalmente, fornece resultados empíricos sobre a interação entre as três capacidades dinâmicas no contexto das organizações públicas, diferenciando essas capacidades em dois níveis, o que fornece um roteiro para sua implementação e desenvolvimento pelos gestores públicos.

**Palavras chave** – Reformas administrativas; Capacidades organizacionais; Capacidades dinâmicas; Desempenho organizacional; Mudança organizacional, Setor público.

# The role of dynamic capabilities on the effectiveness of organizational changes in public sector

## 1. Introduction

Over the past few decades, governments worldwide have periodically implemented administrative reforms. While these governments initially aimed to increase efficiency and reduce public spending, they are now more focused on transparency (Gil-Garcia *et al.*, 2020) and stakeholder involvement in formulating and implementing public policies (Kim, 2021). In this context, it appears that public organizations, unlike in the past, are frequently changing due to unpredictable events or administrative reforms that aim to meet the needs of their main stakeholders (Hansen and Ferlie, 2016; Kuipers *et al.*, 2014). This paradigm shift resulted from pressures from the external environment and was only possible because governments decided to open public organizations to society and focus their services on citizens.

Opening to a turbulent and unstable environment can cause changes in managerial behavior and processes of public organizations (O'Toole and Meier, 2015), leading their managers to follow a dynamic capabilities logic, shifting their focus toward exploratory learning rather than learning through internal processes during stable times (Teece, 2007). Therefore, just like private firms rely on dynamic capabilities to sustain their innovative capacity and competitive advantage, public organizations can use similar capabilities to improve their ability to meet the needs of citizens and satisfy their stakeholders (Trivellato *et al.*, 2021).

As key instruments of effective organizational change, dynamic capabilities seek to increase the efficiency and effectiveness of public resources, helping governments deliver on their promises of democratic accountability and better service delivery. Despite the intense worldwide reforms movement, it seems that research has not followed the same pace, whether on change in public organizations (Widianto *et al.*, 2021) or their effects on organizational performance (Chang, 2021; Hammerschmid *et al.*, 2019).

As such, this investigation is guided by two research questions.

What is the contribution of dynamic capabilities to the effective implementation of administrative reforms?

How are dynamic capabilities interacting in public organizations?

Aiming to answer these questions, we explore the relationship between the effective implementation of administrative reforms and the performance of public organizations. For this purpose, we analyze the mediation role of dynamic capabilities.

Although the dynamic capabilities perspective seems to fit well in the increasingly volatile environment experienced by many public organizations (Hansen and Ferlie, 2016), according to the literature, this topic is still underexplored in public sector research (Clausen *et al.*, 2020), especially as a mediating effect (Nuhu *et al.*, 2019).

We empirically analyze the research framework using data collected by a survey of public officials and managers working in various public organizations in the State of Ceará (Brazil), which have implemented administrative reforms recently.

This article makes three significant contributions to public administration literature. First, it shows the direct positive effect of administrative reforms on the performance of public organizations. This finding enables scholars and practitioners to see the result of government policy proposals beyond the efficient use of public resources, extending the analysis to multiple performance perspectives, including innovation, quality, reputation, and the morale of the organization's members.

Second, it shows the role of dynamic capabilities as mediation instruments for changing public organizations, which can be used in administrative reform implementations and continuous improvement processes. Finally, it provides empirical research on the interaction between the three decisive dynamic capabilities in the context of public organizations, differentiating these capabilities into two levels, which provides a road map for their implementation and development by public managers.

The following section presents a review of the most recent public administration literature related to the topics under study, while the subsequent section describes the methods and measurements. The fourth and fifth sections present the results and discussion. Finally, the conclusions and implications for theory and practice are presented.

## **2. Literature review**

### **2.1 Dynamic organizational capabilities**

Business organizations use their resources daily to make products and deliver services. However, how they configure these resources makes them competitive in the global market, which means that business organizations' competitiveness depends more and more on their organizational capabilities and less on the individual efficiency of their resources.

The literature identifies two types of organizational capabilities: ordinary and dynamic capabilities. While ordinary capabilities are responsible for the effective operation of existing resources, dynamic capabilities are responsible for changing resources in response to market changes, helping identify new products and services, and potentially opening up new opportunities. While the former are about doing things right, the latter are about doing the right things at the right time (Teece, 2016), being both decisive in different ways (Schoemaker *et al.*, 2018). In this perspective, the business management literature has followed the dynamic capabilities research approach to analyze how organizations use their resources to anticipate, adapt, and proactively react to market changes. It deals with the ability of these organizations to renew their internal capabilities and align their resources with market needs (Teece *et al.*, 1997). Therefore, dynamic capabilities are the cornerstone of competitive advantage (Qaiyum and Wang, 2018).

Dynamic capabilities are learned and stable patterns of collective activity through which the organization systematically generates and modifies its operational routines for superior effectiveness (Zollo and Winter, 2002). They can be defined as organizational and strategic routines through which organizations achieve new resource configurations (Eisenhardt and Martin, 2000). Dynamic capabilities can be categorized into two levels: a low-order category with routines to dynamically improve operational activities and a high-order category with creative routines focused on strategy (Collis, 1994). They can also be designated as lower-order dynamic functional and higher-order dynamic learning capabilities (Hine *et al.*, 2014). Overall, they are on two levels: first-order dynamic capabilities reconfigure the organizational

resource base, and second-order dynamic capabilities reconfigure first-order ones (Schilke, 2014).

Public reform movements have tried to convince managers of public organizations to adopt practices and behaviors similar to business organizations (George, Van de Walle, *et al.*, 2019). However, organizations in these two sectors show distinctive characteristics (Poole *et al.*, 2006). They may follow similar management practices, but they will always have different objectives and responses to overcome their challenges, namely how they use their organizational capabilities (Elbanna and Abdel-Maksoud, 2020). While business organizations have profit as their primary objective, public organizations have multiple objectives, sometimes conflicting, vague, intangible, and difficult to measure (Piening, 2013), such as creating public value, which is arbitrated by their stakeholders (Prebble, 2018).

As such, organizational change processes in public organizations do not have the same causes or use the same processes as business organizations. Unlike the latter, public organizations disseminate their best practices with their counterparts and therefore tend to present similar organizational processes within the public sector. However, at some level, all organizations distinguish between their resources and the management routines, processes, and practices needed to maximize their use (Deslatte and Stokan, 2020). Each public organization has different structures and routines, and its managers have specific experiences, skills, and expectations to combine and change their resources. This diversity of approaches to change produces different outcomes (Ridder *et al.*, 2005), allowing public organizations to reach different levels of competitiveness in their sector to obtain financial resources (Matthews and Shulman, 2005).

Public organizations are driven to change by contextual pressures, such as the changes of their stakeholders (Askim *et al.*, 2009), the availability of new technologies (Dunleavy *et al.*, 2006), or even global crises like the Subprime and the pandemic Covid-19. As such, public organizations, like private ones, undergo frequent changes, either through administrative reforms or through almost daily small steps (Fernandez and Pitts, 2007; Homberg *et al.*, 2019). This environment of continuous change leads to belief in the use of dynamic capabilities as a strategic approach by public organizations (Klein *et al.*, 2013; Pablo *et al.*, 2007).

Overall, while the dynamic capabilities of business organizations focus on skills that enable change in an uncertain environment, the dynamic capabilities of public organizations focus on the internal structures that allow them to become agents of change within a broader industry context (Kattel and Mazzucato, 2018). They can be described as packages of interrelated routines that, shaped by path dependence, allow an organization to renew its ordinary capabilities in search of better performance (Piening, 2013) and public value (Klein *et al.*, 2013). They result from management decisions, but they can also be influenced by organizational conditions, such as culture and organizational structure (Kim and Lee, 2006; Trivellato *et al.*, 2021)

Public organizations can use their strategic management capabilities to align the strategy with their operational activities and thus achieve their goals (Trivellato *et al.*, 2021). These capabilities can also help managers of public organizations to allocate the resources that will enable them to achieve objectives more effectively and improve organizational performance. As such, the following hypotheses should be formulated:

H1: Strategic management capability is directly and positively associated with organizational performance

H2: Strategic management capability is directly and positively associated with operational management capability

For effective strategic planning and decision-making of public organizations, all their stakeholders should be engaged (Xavier *et al.*, 2021). In this process, external stakeholders have an essential role as a source of information that can drive innovation (Torfing, 2019), promote green operations (Liu *et al.*, 2021), and help to ensure appropriate workplace conduct in public organizations (Andersson and Ekelund, 2022).

According to the stakeholder theory (Freeman, 1984), different groups of external stakeholders exist based on interest and power, and managers of public organizations should be aware of this distinction to promote stakeholder participation (Hendrick, 2003). They include customers, suppliers, regulators, government institutions, and citizens. Improving customer relationships can potentially increase revenues, working more closely with suppliers can cut costs, and improving the relationship with citizens will enhance trust. To nurture these relationships and maintain trust in a long-term strategic perspective, it will be necessary to use the most recent information and communication technology (Torfing *et al.*, 2019). Therefore, engaging with external stakeholders will provide essential information to improve strategic and operational management, along with organizational performance. As such, the following hypotheses should be formulated:

H3: External stakeholders' relations capability is directly and positively associated with organizational performance

H4: External stakeholders' relations capability is directly and positively associated with strategic management capability

H5: External stakeholders' relations capability is directly and positively associated with operational management capability

Like business organizations, public organizations depend on their operational processes to achieve or even exceed their goals. For this purpose, public organizations need operational management capabilities that continuously improve these processes through the innovation of work practices and the development of integrated solutions promoted by employees. These capabilities can be the source of highly routinized innovation practices (Gullmark, 2021), which will continuously support long-term government strategies (Trivellato *et al.*, 2021). As such, the following hypothesis should be formulated:

H6: Operational management capability is directly and positively associated with organizational performance

## **2.1 Administrative reforms**

Governments have periodically implemented administrative reforms to modernize public administration and improve service delivery with lower costs and prices (Bianchi and Xavier, 2017). These reforms aim to improve organizational performance (Hameduddin and Fernandez, 2019) and implement government policy proposals (Lichtmannegger and Tobias, 2020).

The reform movement most mentioned in the literature on public administration is called New Public Management (NPM). Supported by the Organization for Economic Cooperation and Development (OECD) and representing a set of governmental doctrines, it began in the 1970s in the United Kingdom and soon afterward in Australia and New Zealand (Xiaolong and Christensen, 2019). The initial objectives of the NPM were to promote increased automation of public services, lower personnel expenditures, privatization, decentralization, and international and intergovernmental cooperation (Hood, 1991). The first criticisms of the results of its implementation were not long in coming, however.

Critics of NPM have argued that the differences between public and private organizations are so significant that business practices should not be transferred to the public sector (Boyne, 2002). One implication of introducing market practices into the public sector was that the interaction between various partners, who often enjoyed a great deal of autonomy from the state, became increasingly complex (Hwang, 2019). It was also found that downsizing would negatively influence the quality of services (Hammerschmid *et al.*, 2019).

In the late 1990s, the post-New Public Management (post-NPM) reform movement emerged due to shortcomings, including the increased fragmentation and lack of control resulting from the initial NPM implementations (Donadelli *et al.*, 2020). The new administrative reforms tried to overcome these shortcomings by advocating re-centralization and re-regulation and by strengthening governance capacity through the improvement of control and coordination mechanism (Hwang, 2019). Furthermore, the active participation of citizens based on their rights has become a concern of governments, moving away from the customers' view (Donadelli *et al.*, 2020). New reforms are often added to old ones, producing hybrid reforms (Xiaolong and Christensen, 2019).

NPM and post-NPM reform movements have been widely presented to explain recent reforms. However, despite their intense scrutiny in the literature, these two paradigms remain poorly defined as explanations for the change that has taken place in public administration (Laffin, 2019). Perhaps for these reasons, more recently, new reform movements have emerged, seeking to promote an opening of public organizations to society. One of these movements advocates network governance, aiming to build successful relationships between relevant actors that facilitate a culture of mutual respect and share learnings to serve the public interest (Kim, 2021). Another reform movement advocates government openness and has played a significant role in administrative reforms during the last decade, which has driven many countries worldwide to implement initiatives related to information availability, transparency, participation, collaboration, and information technology (Gil-Garcia *et al.*, 2020). This movement aims to change public organizations, promoting their openness to citizens and encouraging other organizations to take similar initiatives (Ingrams, 2020).

According to the most recent literature, governments use administrative reforms more frequently than in the past, aiming to meet stakeholders' needs. As such, it appears that public organizations are continuously changing through administrative reforms that aim to promote managerial flexibility and improve the effectiveness of their resources (Kellough and Nigro, 2006). In addition, Governments worldwide expected public organizations to adopt strategic planning and decision-making processes, with stakeholders participation (Poister *et al.*, 2010). In this way, strategic management plays a preponderant role in linking citizens' needs, administrative reform procedures, and organizational performance (Teece, 2018). As such the following hypotheses should be formulated

H7: Effective implementation of administrative reforms is directly and positively associated with external stakeholders' relation capability.

H8: Effective implementation of administrative reforms is directly and positively associated with operational management capability.

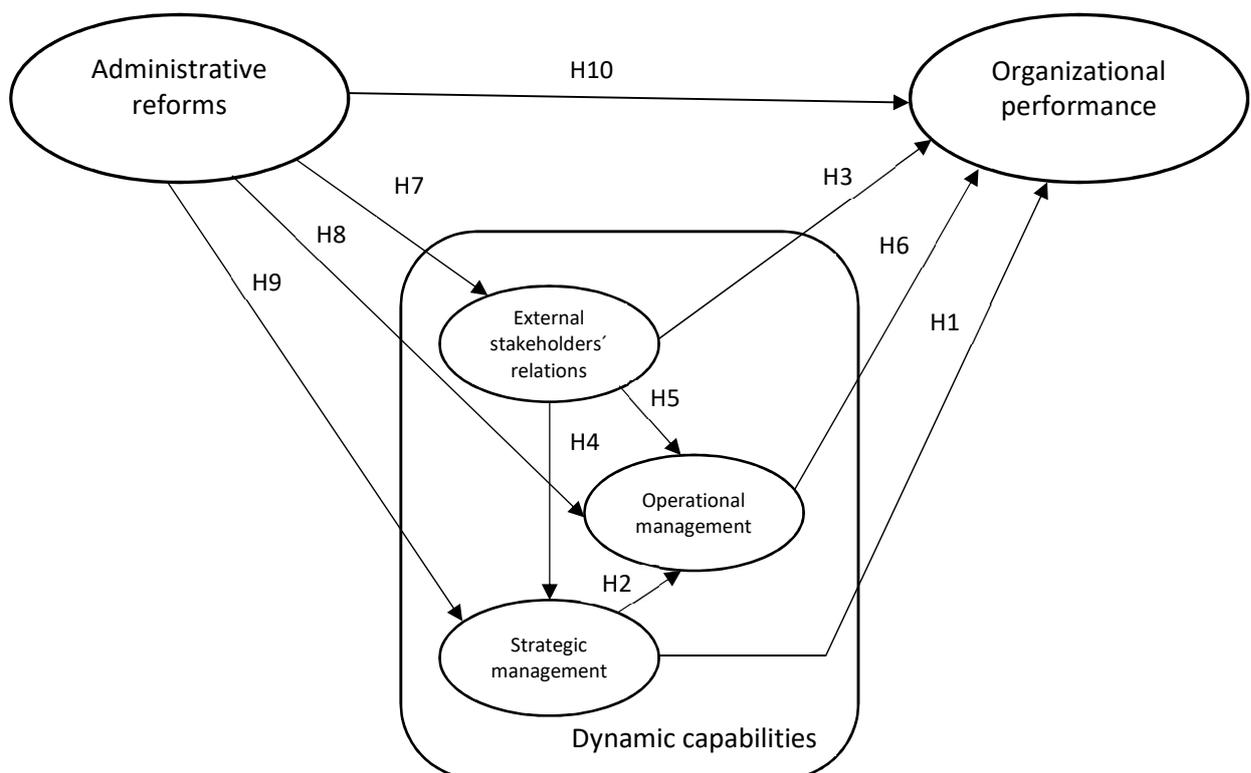
H9: Effective implementation of administrative reforms is directly and positively associated with strategic management capability.

Not all administrative reforms necessarily result in successful change that improves organizational performance (Lichtmanegger and Tobias, 2020), especially measured from a comprehensive performance perspective that includes innovation, quality, reputation, and the morale of the organization's members. (Reiter and Klenk, 2019). However, bearing in mind that governments use administrative reforms to improve the performance of public organizations, the following hypothesis should be formulated:

H10: Effective implementation of administrative reforms is directly and positively associated with organizational performance.

Thus, based on the literature review, the conceptual research framework of this study is presented in Figure 1.

**Figure 1 – Conceptual framework**



Note: This figure shows the conceptual model derived from the literature review. It shows the direct relationship between the implementation of administrative reforms and organizational performance. It also shows the mediation effect of dynamic capabilities on this relationship.

### 3. Methods and measurement

#### 3.1 Sample and data collection

Brazil followed the New Public Management (NPM) ideas and launched the Brazilian "Master Plan for Public Administration Reform", in 1995. Later, at the beginning of this century, a significant government political shift marked the transition to Post-NPM reforms through initiatives that promoted public participation and transparency (Donadelli *et al.*, 2020), following the Open Government Declaration (Schnell and Jo, 2019). Thus, administrative reforms in Brazil have attempted to modernize public organizations and increase stakeholders' participation (Gomes and Lisboa, 2021). In this context, managers and employees of public organizations from the State of Ceará – Brazil were invited to participate in this study. For this purpose, questionnaires were sent to 1,213 participants, and 260 valid responses were received, corresponding to a response rate of 21.43%. Although it cannot be considered a high rate, it is similar to response rates from similar studies (Nitzl *et al.*, 2019; Verbeeten and Speklé, 2015). Table 1 presents the characteristics of the respondents and the organizations where they work

**Table 1 - Descriptive Statistics of Respondents**

		Frequency	Percent
Gender	Male	130	50.0
	Female	130	50.0
	Total	260	100.0
Age	18 - 25	1	0.4
	26 - 35	37	14.2
	36 - 45	96	36.9
	46 - 55	77	29.6
	56 - 65	39	15.0
	> 65	10	3.8
	Total	260	100.0
Educational level	Technical level / High School	2	0.8
	Graduate	25	9.6
	Postgraduate	116	44.6
	Master	102	39.2
	PhD	15	5.8
	Total	260	100.0
Function	President / Secretary	4	1.5
	Director / Coordinator	65	25.0
	Manager / Executive	80	30.8
	Employee	111	42.7
	Total	260	100.0
Type of organization	Secretaries	131	54.4
	Executive agencies	9	3.5
	Foundations	10	3.8
	Public companies	30	11.5
	Mixed Economy Society	11	4.2
	Legislative and Courts of Auditors	54	20.8
	Judicial and Prosecutor's Office	15	5.8
	Total	260	100.0

Note: This table reports the number of respondents and their characteristics, including gender, age, and education level. It also reports the type of organization where they work and their function.

Source: Authors' own creation

There is a balanced gender distribution. It is also found that more than 98% of respondents have postgraduate educational levels and belong to various types of public organizations in the State of Ceará.

Several procedural remedies were employed to decrease the probability of common method bias (Podsakoff *et al.*, 2003). Harman's single-factor test and common latent factor suggest that common source bias is not a severe concern in this research.

### **3.2 Instrument measures and data analysis**

The measurement items included in the questionnaire (Appendix A) were selected based on a comprehensive literature review of the topics studied. All these items, which were originally written in English, were translated into Brazilian Portuguese and later into English by experts with knowledge of both languages. The results of the comparison between the two English versions showed no relevant differences. To validate the content of the questionnaire, we asked a panel of experts in the field of public administration, which includes professors, researchers, and professionals, to verify that the terminology of the questions was consistent with the respondent's level of understanding (Forza, 2002). After the validation process, the final questionnaire version was considered adequate for the Brazilian public organizations' context.

The questionnaire was organized in two sections. The first section includes all the items related to constructs analyzed in the research framework. The dependent variable, organizational performance, was measured through a well-known comprehensive measure developed by Van de Ven & Ferry (1980) validated and used validated by other authors ( e.g., Nitzl *et al.*, 2019; Verbeeten, 2008; Verbeeten & Speklé, 2015). It includes items related to quantity, quality, efficiency, innovation, reputation, and employee morale. For this purpose, respondents were asked to indicate each construct item's performance level through a seven-point Likert scale.

The dynamic capabilities were conceptualized through three dimensions (external stakeholder relations, strategic management, and operational management). The multidimensional scale used by Koufteros *et al.* (2014) was adapted to measure these capabilities. For this purpose, respondents were asked to indicate the level of utilization of each construct item through a seven-point Likert scale.

For measuring the effective implementation of the administrative reform, the instrument developed by Kellough & Nigro (2006) was adapted. Respondents were asked about their perception regarding the level of effectiveness of each construct item using a seven-point Likert scale.

The second section of the questionnaire includes information for the sample profile (Table 1).

Structural equation modeling (SEM), through the two-step method, was used to analyze the relationships presented in the research framework. Thus, after the measurement results had reached the standards defined in the literature, the relationships between the constructs (i.e., the structural model) were estimated using the covariance matrix and the maximum likelihood estimation (MLE) method (Byrne, 2010). Construct operationalization was based on

a reflective approach (Edwards and Bagozzi, 2000). The software IBM AMOS, version 24, was used for data analysis.

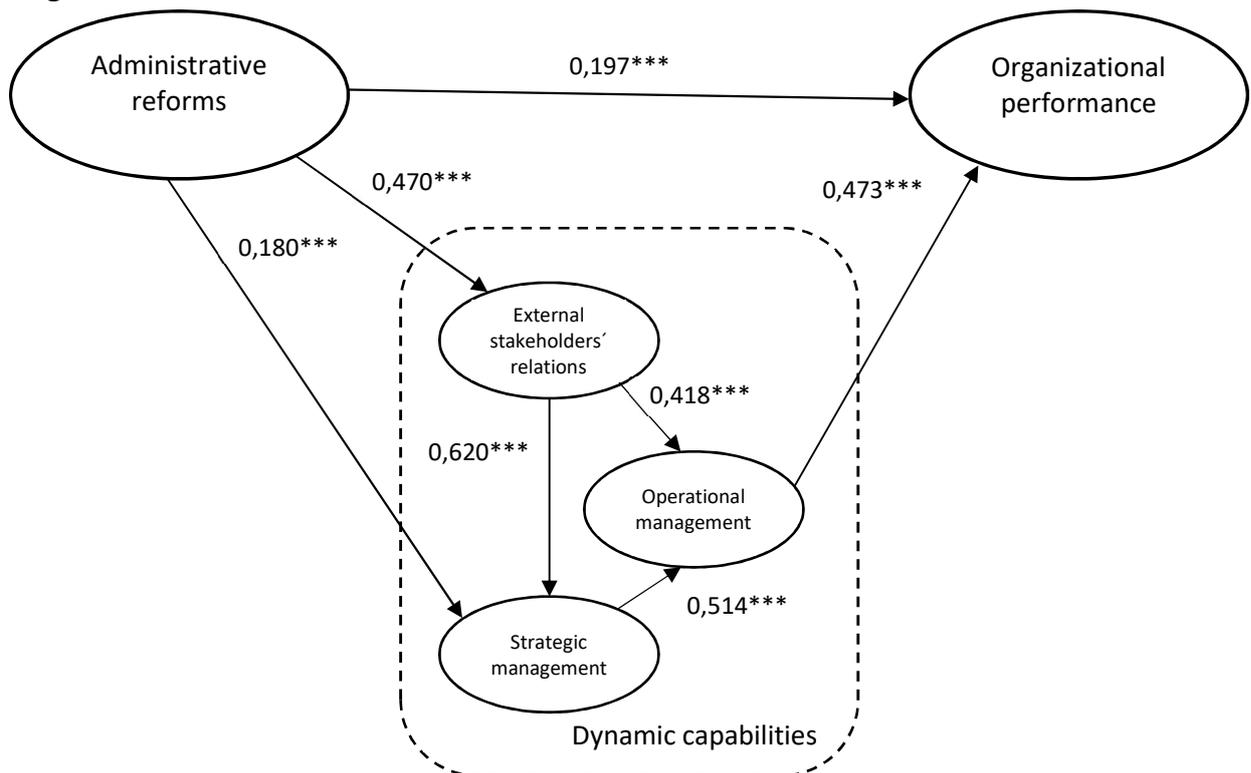
#### 4. Results

The initial research model was modified based on successive interactions, considering item reliability, standardized residual covariances, and modification indices (Byrne, 2010; Hair *et al.*, 2014). The measurement items and related statistics are presented in Appendix A. None of the variables showed skewness and kurtosis values that indicate substantial violations of the normal distribution, thus fulfilling the assumptions of using structural equation models (Hair *et al.*, 2014)

The final measurement model presented an adequate fit to data ( $\chi^2 = 657.01$ ,  $df = 265$ ,  $\chi^2/df = 2.479$ ,  $GFI = 0.832$ ,  $CFI = 0.931$ ,  $TLI = 0.922$ ,  $PCFI = 0.822$ ,  $RMSEA = 0.076$ ). Concerning item reliability, all factor loadings were statistically significant and reasonably strong. According to the results (Appendix B), construct validity, reliability, and discriminant validity were assured (Fornell and Larcker, 1981; Hair *et al.*, 2014).

The significant estimated parameters for the structural model are presented in Figure 2.

**Figure 2 – Results of the structural model**



\*\*\*Significance level < 0.01

Note: This figure shows the significant variables' relationships supported after applying covariance structural equation modeling. It also shows the estimated parameters for each relationship and their significance level.

Source: Authors' own creation

The direct, indirect, and total effects for all tested relationships are presented in Appendix C.

First, we analyzed how dynamic capabilities interact to exert their mediation role. The direct effect of strategic management on organizational performance is statistically nonsignificant ( $p > 0.05$ ), not supporting H1 nor confirming the independent mediating effect of this capability on the relationship between the effective implementation of administrative reforms and organizational performance. The direct effect between the external stakeholders' relations and organizational performance is also nonsignificant ( $p > 0.05$ ), not supporting H3 nor confirming the presence of the independent mediating effect of this capability. The direct effect between administrative reforms and operational management capability is statistically nonsignificant ( $p > 0.05$ ), not supporting H8 nor confirming an independent mediating effect of this capability on the relationship between the effective implementation of administrative reforms and organizational performance.

Therefore, no independent mediating effects for each dynamic capability were found. However, the indirect effect between administrative reforms and organizational performance is positive (0.241) and significant ( $p < 0.01$ ), which means that dynamic capabilities play a decisive role as mediators between effective implementation of administrative reforms and organizational performance, answering research question 1. In addition, by analyzing Figure 2, we can verify that the mediation effect is due to the interrelationship between these capabilities, which means the existence of two levels of dynamic capabilities, answering research question 2.

Finally, the results found the direct and positive association between the effective implementation of administrative reforms and organizational performance to be significant ( $p < 0.01$ ), supporting H10. These results mean that dynamic capabilities do not exert a full mediation between administrative reforms and organizational performance.

## 5. Discussion

The results of this study show that the implementation of administrative reforms is associated with organizational performance improvement, which is achieved through two paths: the direct relationship between reforms and organizational performance and the use of dynamic capabilities as mediating variables of this relationship.

By analyzing the results related to the mediating variables, which represent the dynamic capabilities and the interaction between them, we can understand their role in increasing organizational performance. We found two double mediations: operational management assumes a mediation role between external stakeholders' relationships and organizational performance and between strategic management capability and organizational performance. In addition, we note that external stakeholder relations directly influence strategic management capability. Therefore, these dynamic capabilities can have multiple levels of implementation (Collis, 1994), which means that there may be second-order dynamic capabilities that indirectly affect organizational performance by reconfiguring first-order dynamic capabilities (Schilke, 2014). From this perspective, the results show that operational management capability, as a first-order capability, plays a decisive role in improving organizational performance by reconfiguring essential public resources. To this end, the managers of these organizations should be trained to increase their authority and participation in formulating policies that are part of the changing processes (Widiyanto *et al.*,

2021) and develop their skills to embrace organizational change. To do so, they need to demonstrate the ability to manage functional and political power relations, both internal and external (Fernandez and Rainey, 2006). It should be noted that this is not an easy task, as it is necessary to achieve multiple, sometimes contradictory, objectives imposed by multiple stakeholders.

Relationships with external stakeholders and strategic management, as high-order dynamic capabilities, while not directly acting on organizational performance improvement, will help managers better understand how to develop operational management capability dynamically. As such, public organizations use stakeholder relationship capabilities to dynamically reconfigure operational management, which shows that governments have much to gain from the participation of a wide range of actors in public administration (Sørensen *et al.*, 2021). Thus, the results of this study confirm the literature that signals the involvement of stakeholders in the reconfiguration of internal resources and drives organizational performance (Pang *et al.*, 2014).

The relationship with external stakeholders' capabilities also influences strategic management, providing managers with information to align strategic plans of public organizations with changes in their external environment and, consequently, improve organizational performance (George, Walker, *et al.*, 2019). This way, these capabilities can contribute to the success of the most recent reforms aimed at promoting the government's openness to society (Gil-Garcia *et al.*, 2020; Ingrams, 2020). For this purpose, it is necessary to develop the skills of public professionals to cross borders and develop links between people and organizations (Gieske *et al.*, 2019). This study thus confirmed that effective stakeholder management could be crucial to the strategic management of public organizations, specifically to the organizational performance seen from a comprehensive perspective (Mitchell, 2022).

Finally, the results show that administrative reforms directly and positively influence strategic management and the relationship with external stakeholders, which can explain normative and institutional changes in organizational processes and routines. These changes are based on the transfer of authority to managers and politicians, giving them a more decisive role in strategic planning and their relationship with external stakeholders (Ateh *et al.*, 2020; Kellough and Nigro, 2006).

## **6. Conclusion**

Based on the most recent literature review on public administration, we verified the existence of two important gaps. We found that, although implementing administrative reforms efficiently, as expected in public organizations guided by procedural management, they do not always increase organizational performance. We also found that although public organizations face an increasingly volatile environment and dynamic capabilities are effective instruments for organizational change management, few empirical studies analyzed how these capabilities are used in the public sector. To fill these gaps, we empirically explored the relationship between the effective implementation of administrative reforms and the performance of public organizations, analyzing the mediation role of three dynamic capabilities related to the most recent concerns of public administration literature.

To answer the identified research questions, we verified that dynamic capabilities contribute as mediators for the effective implementation of administrative reforms in public

organizations, helping them to improve organizational performance. We also confirmed that there are distinct characteristics in the relationship between these dynamic capabilities in public organizations and their counterparts in the private sector. This distinctive approach to dynamic capabilities is not surprising since public organizations have different goals and responses to overcome challenges (Elbanna and Abdel-Maksoud, 2020). Thus, our findings help to understand the interactions between the dynamic capabilities that are decisive for the success of public organizations, contributing significantly to filling a gap in the public administration literature (Trivellato *et al.*, 2019).

This research makes significant contributions to the theory and practice of public administration. From a theoretical point of view, it makes it possible to analyze the impact of administrative reforms on organizational performance from a comprehensive perspective, avoiding the minimalist approaches to the efficient use of resources, which often induces dysfunctional behavior in employees and managers of public organizations (Siverbo *et al.*, 2019). It also identified the role of dynamic capabilities in improving organizational performance. From a practical point of view, by identifying these capabilities and their interrelationship, this study provides a roadmap to reduce the complexity of their use and help managers of public organizations deliver desired outcomes relating to the quality of individual and collective life (Moore, 2013, 2014). However, the ability to mobilize relevant public and private stakeholders depends on the capacity and willingness of public leaders to influence and convince the actors involved about the relevance of their policy objectives (Torfing and Sørensen, 2019).

Overall, based on the findings of this study, it seems that Brazilian public organizations are following an open system path, using dynamic capabilities to sense the external environment and reconfigure their internal resources.

This study addresses relevant theoretical and practical issues but has the usual limitations of cross-sectional and survey-based research. The sample used in this study is specific to the public sector of the state of Ceará-Brazil. Any generalization of the results should be made with caution. Although comparable to similar studies, the sample size avoided further analysis, including the type of public organization's effect on organizational performance.

Future research should conduct similar analysis across government levels and contexts other than emerging economies like Brazil but distinctly developed or developing countries. Using different methodologies, such as case studies, can also help better understand the specificities of dynamic capabilities in the public sector.

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## Appendix A – Statistics of Measurement items

Measurement items	Mean	SD	Skew.	Kurt.
<b>Organizational Performance</b>				
The quantity or amount of work produced	5.00	1.306	-0.635	-0.192
The quality or accuracy of work produced	4.86	1.309	-0.678	-0.001
The number of innovations or new ideas	4.41	1.421	-0.330	-0.605
The reputation of 'work excellence'	4.78	1.413	-0.498	-0.371
Attainment of production or service goals	4.85	1.270	-0.457	0.001
Efficiency of operations	4.62	1.337	-0.407	-0.387
Morale of personnel	4.59	1.445	-0.258	-0.604
<b>Strategic management capability</b>				
Give feedback on the government strategy and its strategic direction	4.48	1.526	-0.374	-0.489
Give feedback on operational processes	4.47	1.508	-0.359	-0.596
Enhance negotiation of financial support to projects	4.70	1.508	-0.496	-0.446
<b>Operational management capability</b>				
Increase the innovation of working practices	4.72	1.482	-0.582	-0.400
Enhance the development of integrated solutions	4.78	1.477	-0.752	-0.061
Promote operational improvements	4.87	1.427	-0.688	0.023
Increase productivity	4.90	1.400	-0.792	0.24
Improve employee performance in their operations	4.75	1.473	-0.687	-0.163
<b>External Stakeholder Relations Capability</b>				
Improve our relationship with suppliers	4.49	1.503	-0.506	-0.416
Improve our relationship with customers	5.03	1.401	-0.755	0.052
Improve our relationship with regulators and government institutions	5.03	1.384	-0.851	0.323
<b>Administrative reforms</b>				
The provisions and purposes of the CSRL have been clearly communicated to employees of my organization	3.60	1.753	0.031	-1.236
The CSRL has made the workforce of my organization more productive and responsive to the public	3.83	1.666	-0.035	-1.062
I believe my organization has made good use of the greater discretion it has under the CSRL	4.14	1.459	-0.301	-0.326
Under authority provided by the CSRL, my organization has established an effective human resources program	3.73	1.554	-0.028	-0.666
It has been possible to terminate low perform without major procedural delays in my organization	3.65	1.490	-0.075	-0.721
The CSRL causes employees to be more responsive to the goals and priorities of administrators	4.03	1.631	-0.274	-0.824
Under authority provided by the CSRL, my organization can hire highly qualified people in a timely manner	3.54	1.668	0.178	-0.845

Note: This appendix reports the mean, standard deviation (SD), skewness (Skew), and kurtosis (Kurt) of all items that were measured on a seven-point scale. According to these results, the variables fulfill the assumptions of using structural equation models.

Source: Authors' own creation

## Appendix B – Measures of construct validity and reliability

	AR	OP	SM	ES	OM	$\alpha$	CR	AVE
Administrative Reforms (AR)	0.749					0.899	0.899	0.561
Organizational Performance (OP)	0.438	0.785				0.913	0.918	0.616
Strategic Management (SM)	0.467	0.487	0.878			0.887	0.908	0.771
External Stakeholders (ES)	0.470	0.493	0.703	0.888		0.901	0.918	0.789
Operational Management (OM)	0.500	0.579	0.838	0.809	0.913	0.956	0.962	0.834

Note: This appendix reports the internal consistency of each scale (Cronbach's alpha coefficient), the Composite Reliability (CR), the Average Extracted Variance (AVE), and the correlations between constructs. It also presents the square root of AVE on the diagonal. According to these results, construct validity, reliability, and discriminant validity were assured.

Source: Authors' own creation

## Appendix C – Standardized estimates

	Relations	Direct effect		Indirect effect		Total effect	
		Estim.	Sig.	Estim.	Sig.	Estim.	Sig.
H1	Strategic Management -> Organizational performance	-0.026	ns	0.243	***	0.217	**
H2	Strategic Management -> Operational Management	0.514	***	-	-	0.514	***
H3	External Stakeholders -> Organizational performance	0.037	ns	0.332	***	0.369	***
H4	External Stakeholders -> Strategic Management	0.620	***	-	-	0.620	***
H5	External Stakeholders -> Operational Management	0.418	***	0.319	***	0.737	***
H6	Operational Management-> Organizational performance	0.473	***	-	-	0.473	***
H7	Administrative Reform-> External Stakeholders	0.470	***	-	-	0.470	***
H8	Administrative Reform-> Operational Management	0.063	ns	0.437	***	0.500	***
H9	Administrative Reform-> Strategic Management	0.180	***	0.287	***	0.467	***
H10	Administrative Reform-> Organizational performance	0.197	***	0.241	***	0.438	***

\*\*\*Significance level<0.01; ns- not significant

Note: This appendix reports the structural model's direct, indirect, and total effects. It presents their estimates (Estim) and significance (Sig) for these effects. All coefficients are standardized. According to these results, the direct positive effect between administrative reforms implementation and organizational performance is significant. The independent mediation of each dynamic capability is not significant. As such, the mediation between reforms and organizational performance is due to the interrelationship between these capabilities.

Source: Authors' own creation