

What strengthens resilience in public administration institutions?

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Abstract

Public administration has to cope with the constant changes which affect today's society and continue to ensure citizens' well-being. Consequently, public institutions should strengthen their capacity to manage the unforeseen, namely, to become resilient to different types of shocks. In this context, the present research aims to investigate the concept of resilience, trying to establish the most important drivers of institutional resilience. The main objective is to propose a conceptual framework based on a meta-analysis of existing studies regarding resilience which can be used for defining and measuring the capacity factors that might influence the institutional resilience of public administration. The framework will be further used in future research. It will be applied to public institutions, at different administrative levels to reveal how prepared for future shocks they are and to find out new ways of strengthening their resilience. From the methodological point of view, an exploratory study was conducted by reviewing the literature in this field in order to establish the main drivers that might influence and strengthen institutional resilience. As a result, we proposed a conceptual framework that includes the main capacity factors of institutional resilience and a set of quantitative and qualitative indicators defining these drivers.

Keywords: institutional resilience, public institutions, conceptual framework

Introduction

Modern societies are now facing different challenges from those in the past. Consequently, the countries are focused on finding the necessary tools to cope with the constant changes and possible threats. Countries should survive and develop their ability to cope with the threat of potential shocks such as political instability, economic crises, immigration, climate change, environmental disasters,

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globalization, demographic changes, or terrorism. Even fast-technological development and innovation can be considered factors with a great impact on societies' normal evolution. In this respect, governments and public institutions play major roles by designing policies that should foresee the potential shocks' impact, prevent them and help nations to adapt and adjust to the constant changes and, in the end, recover and evolve after shocks' striking. As an example, the medical crisis which threatens the social and economic systems of the countries due to the coronavirus pandemic represents a major shock for multiple stakeholders, including public administration (OECD, 2020; International Monetary Fund, 2020). In reality, public institutions are facing two major shocks to which they must react simultaneously: the problems faced by the national medical systems and the economic crisis which will come afterwards. The public administration must cope with the effects of the coronavirus pandemic while adopting the necessary policies for the economies to survive after this major shock. This crisis requires flexibility and a strong capacity to adapt in a short period, so as to ensure that the impact and consequences are reduced as much as possible. More than ever, public institutions should show a high level of resilience as they must respond to the needs of the affected social groups. Public institutions must help the medical system, the vulnerable groups which present a high level of exposure in this situation, the workforce, the business environment, and also act in solidarity with other states which are in need. Even more, in times of crisis, public institutions should support all the members of society by creating online platforms for communication between institutions and citizens, provide support for the vulnerable population and protect not only the most exposed to risk but also the other citizens who can cooperate and help in managing the situation. If countries did not prepare their public institutions for the management of crises, national economies, regions, or communities would be severely affected because they do not have the necessary tools to either bounce back or to bounce forward to a new state of equilibrium.

In this context, the public administration, often characterized by rigidity, should find the necessary tools to fight against the unpredictable and absorb the constant changes and challenges. Furthermore, public institutions should adapt by embracing change and innovation and also evolve while managing to deliver qualitative services for citizens. In this regard, the public administration must strengthen its resilience, a concept that is in opposition to the traditional characteristics of public institutions.

Based on rigidity, hierarchy, procedures, formalities, and specific norms, public administration is now confronting with the challenge of changing its traditional values. It should become more flexible, adaptable and, in the end, transformational. In this manner, the public administration and its institutions will manage to become resilient and cope with all the unpredictable events affecting the social and economic environment.

The resilience of a system is a complex concept that cannot be analyzed only from one perspective. Resilience is also a variable feature because even if a system regains its initial equilibrium or evolves to a new state, a process of change will be required in the future. The system will absorb the shock and will adapt to the new circumstances by implementing more or less substantial changes. All the components of the system and the way they respond to these changes will have an impact on the system's resilience (Bruneckiene *et al.*, 2018).

Many studies approached resilience related to natural disasters or economies to find the best solutions for developing and strengthen the resilience of the national, regional, or even local economies as well as the best measures for preparing communities, regions, or countries to respond to natural disasters. In this regard, building a resilient public administration is a complex process that must consider the influence of all types of internal and external factors.

In strengthening economic and social resilience, institutions, whether private or public, play a major role. Public administration is certainly one of the most important factors influencing resilience at the national, regional, and local levels. Building and strengthening the public administration's resilience is a process of reform, which implies different stakeholders, from the national level to the local level. A well-functioning, modern, and adaptable public administration will have a positive impact on societies' well-being and economies' development. Therefore, the need for building and strengthening public institutions' resilience and for creating a set of indicators that will help in defining and measuring the drivers of this particular type of resilience, appeared. In addition, developing a conceptual framework including the main capacity factors which influence the institutional resilience of public administration and what defines them will help to predict public institutions' responses to future shocks.

1. Resilience - a theoretical approach

The concept of resilience was first used in physics and referred to the modalities in which an object or a substance would react to external forces and keep its main characteristics (Peng *et al.*, 2017). Then, the concept was used by Holling (1973) in ecology.

A system's capacity to recover after a shock and regain its equilibrium is called resilience and can be rather considered a process than a result (Bene *et al.*, 2014; Martin, 2012; Simmie and Martin, 2010). The term could be associated with survival, but resilience is also about what a system does after it survives a shock. It could try to reach its initial state or to evolve to a new state of equilibrium by adapting to the occurred changes. Authors (Capello *et al.*, 2015; Eraydin, 2015; Foster, 2007; Hill *et al.*, 2008; Lester and Nguyen, 2015; Pachauri and Reisinger, 2007; Pendall *et al.*, 2009; Pike *et al.*, 2010; Rose and Liao, 2005; Simmie and Martin, 2010; Swanstrom, 2008; Tongyue *et al.*, 2014; Vale and Campanella, 2005;

Williams *et al.*, 2013) approached the concept from different perspectives. Therefore, the literature defines many types of resilience, such as economic, social, ecological, or engineering resilience. Despite the diversity of studies approaching resilience, a general definition or a commonly agreed approach to its measurement could not be established. The reason is that building and strengthening resilience requires a comprehensive analysis where all types of factors such as economic, social, environmental, political, or natural should be analyzed and taken into consideration.

The concept was used in relation to economies, regions, communities, institutions, individuals, natural disasters, or gender issues in fields like physics, economic sciences, psychology, or ecology. It could be studied in relation to individuals (how they surpass unforeseen personal problems, professional problems, natural disasters which affect their households), small groups (like families or teams working in private or public organizations), private or public organizations (which can be affected by budgetary cuts, understaff, economic crisis), communities, regions, nations (affected by an economic crisis, climate changes, environmental problems, economic problems, unemployment, technological and medical crises) and even ecosystems (Zhou *et al.*, 2010; O'Brien and Wolf, 2010; Cutter *et al.*, 2008). Due to the various factors of influence, it is difficult to find a common definition of the concept and a general index or framework which could measure all these types of resilience.

The most common definition of resilience refers to the capacity of a system to cope with the shocks from the external environment (Cai *et al.*, 2012; Wojtowicz, 2020), and preserve its core functions. In addition, when crises or shocks strike, the system will try to use all the existing resources to develop. Most of the authors conducting resilience research referred to the ability of a system to adapt and bounce back to the initial state when an unprevented event (which can be a shock or a stressor) appeared (Klein *et al.*, 2003). Other authors considered resilience as the capacity of a system to *absorb the shock, adapt to the new circumstances, and evolve to a new state of equilibrium* (Holling, 1973). At a first glance, it can be noticed that, in face of a shock, a system is considered resilient if it absorbs the shock and returns to its initial state or bounce forward to a new state of equilibrium, which involves adaptation, embracing change, and continuous development. However, even if resilience is about bouncing back or bouncing forward, in both cases, the system will need to adapt and change. In face of disruption, even if the system maintains its core functions and structures, imminent changes will occur while part of the system will be forced to adapt to the new circumstances.

Scholars from the Resilience Alliance (2010) defined the concept as a system's capacity to absorb shocks and implement changes while keeping the most important structures and functions (Gunderson, 2010). They also considered that resilience has three main features: (a) '*equilibrium*' or '*stability*', namely the capacity of a system to hold out against unpredicted changes and continue to preserve

its core functions and structures (b) ‘*self-organization*’ or ‘*self-recovery*’ which imply an adaptative capacity and (c) ‘*innovation*’, namely a system’s capacity to implement changes and encourage adaptive learning (Tongyue *et al.*, 2014 in Peng *et al.*, 2014). Other authors stood by these opinions too, affirming that resilience cannot be defined only by the capacity of absorbing a shock or by the recovery capacity because resilience implies adapting to the new reality and using innovation to recover after the shock, evolve, and thrive (Aligica and Tarko, 2014).

In a report presented by the Joint Research Center, a system is considered resilient if it reacts to shocks and changes without losing its capacity to deliver sustainable societal well-being for future generations (European Commission, 2018; Manca *et al.*, 2017). This definition assumes that resilience is a major factor for building a sustainable future, as a resilient system will have the capacity to bounce back or forward towards sustainable development. In the mentioned study, we can observe the multi-approach of the concept. The authors considered that economic, social, and environmental resilience should be treated as a whole and not separately. Consequently, the three types of resilience were included in a system based on three factors: *the assets, the engine, and the outcomes*. Assets are constituted by human, natural, social, and built capitals. The outcomes are considered various indicators of well-being (health, employment, happiness, household income, satisfaction, etc.). Finally, the engine has the power of transforming these assets into outcomes, through institutions and processes. This is one of the approaches that comprise the idea of institutional resilience and recognize the importance of institutions in transforming the assets into outcomes of well-being for future generations (European Commission, 2018).

Furthermore, the report uses resilience in connection with economies and societies and presents three capacities that should help societies to develop their resilience, namely *the absorptive, adaptive, and transformative capacities*. The main idea is that systems should adapt their strategies to cope with disturbances depending on the shocks’ intensity and persistence. In the case of small shocks with low persistence, the system should try to absorb the shock without implementing important changes. As the intensity and/ or persistence are increasing, the system should try to absorb the shock and adapt while starting to implement changes. If the intensity of the shock is high and persists for a long period, the system must become more flexible to adapt to the new conditions, and the transformative capacity must be high to perform major changes. These major changes should help the system evolve and not return to the state in which it was before the disturbance. However, these three strategies of approaching resilience might not suit all types of shocks. Consequently, policies targeting specific shocks that enclose these strategies should be designed. Also, there are no specific boundaries that should predict exactly if a system should only absorb the shock or should embrace adaptation and transformation (European Commission, 2018).

The adaptative capacity was considered a feature of resilience by many authors (Dubbeling *et al.*, 2009; Hopkins, 2010; Innes and Booher, 2010; Maguire and Cartwright, 2008; Newman *et al.*, 2009; Norris *et al.*, 2008; Tidball and Krasny, 2007). The main question is how this capacity can be defined. In a study regarding communities' resilience, this capacity was approached from four perspectives: social development, community competence, economic development, and communication (Norris *et al.*, 2008, p. 130 in Grace and Sen, 2013). Also, Hopkins (2010) looked forward and highlighted that in building resilient communities, not only adaptation is important, but also transformation.

Like other types of resilience, institutional resilience was considered to be either the organization's capacity of bouncing back to the state of equilibrium before the crises (Balu, 2001; Dutton *et al.*, 2002; Gittell *et al.*, 2006; Horne, 1997; Horne and Orr, 1998; Mallak, 1998b; Robb, 2000; Rudolph and Repenning, 2002; Sutcliffe and Vogus, 2003) or of bouncing forward and managing to be even more successful than in the past (Coutu, 2002; Freeman *et al.*, 2004; Guidimann, 2002; Jamrog *et al.*, 2006; Layne, 2001; Lengnick-Hall and Beck, 2003, 2005; Weick, 1988; Zhang *et al.*, 2018). Other authors considered the concept as being an organization's capacity to create the appropriate environment for its employees to build their own resilience (Ledesma, 2014). This definition introduces a very important variable for building resilient organizations, namely human resources.

For public institutions, building their resilience and also their employees' could be a very challenging mission. On the one hand, those institutions resistant to change must learn to cooperate with unforeseen situations while helping civil servants to deal with the unprevented. The literature on resilience does not offer much information regarding public institutions' resilience because the majority of the studies are focused on economic resilience and on building communities' or regions' responses to natural disasters, climate change, or other types of risks (Burnside-Lawry and Carvalho, 2013; Saliterer *et al.*, 2017; Oloo and Omondi, 2017; Briguglio, 2016).

From the literature review, we could conclude that there is no common definition or a standard set of variables that would certainly influence resilience, but there are some common features of this concept. Even if the purpose is to measure the resilience of a country, of a region, or a community in face of economic, social, or environmental shocks, the common perspective is that these systems are resilient if they have the capacity of absorbing the shock, adapt and then transform by embracing changes at a low, medium or high level. The major problem remains to identify what kind of strategy is suitable following the type of shock the system is dealing with and its persistence in time. Another difficulty is to take into consideration all the factors that might influence the system's survival, recovery, and evolution.

Regardless of the type of resilience and nature of the shocks, the main idea is that resilience is defined by a system's response to a shock and by its capacity to

recover by using various strategies. In the public institutions' case, these strategies must certainly be included in the national policies, and resilience must be considered a development objective. Also, a general framework for measuring institutional resilience comprising all the factors of influence should be created. This type of resilience needs specific measurement indicators to observe how prepared for future shocks the public institutions are, considering their particularities and constraints.

2. Resilience's approaches by international organizations

The concept of resilience is integrated into policy documents and governments are creating strategies and action plans to prepare their economies for future economic, social, or environmental shocks. The Joint Research Centre (JRC) created a framework of resilience, focusing on societal well-being. Furthermore, the JRC Science for Policy Report presented an analysis of the European Member States' resilience to the financial and economic crises, which started in 2007 (European Commission, 2018). Also, The European Commission adopted an 'Action Plan for Resilience in Crisis Prone Countries' (European Commission, 2013).

Furthermore, the idea of resilience was integrated into the main development objectives of the European countries, and in the Rome Declaration (2017), the Member States affirmed that their purpose is to "make the EU stronger and more resilient, through even greater unity and solidarity amongst us and the respect of common rules". From this declaration, it could be observed that the European Union considers that strengthening resilience depends *on cooperation and solidarity between states and on their capacity to respect all the imposed rules*. Therefore, it could be stated that resilience was approached *as a common effort of all member states, which should cooperate*.

On the other hand, in the reflection paper on Harnessing Globalization (2017), resilience was approached from the perspective of each member state. The paper suggested that *member states as separate entities should "boost...resilience at home"* and presented the policies which should be developed to strengthen national resilience. Strong and resilient nations might have a positive impact on the European Union's resilience as a whole. The national policies regarding education, finance, and the social field should play a major role in strengthening national economies, making them competitive, and ensuring the development of the disadvantaged categories in society. The paper suggests that having strong economies and ensuring equitable living conditions for citizens will make nations more resilient.

In the Joint Communication of the European Commission, "A Strategic Approach to Resilience in the EU's External Action" (2017), resilience was defined as a complex concept that encompasses both individuals and the whole society. The main drivers of resilience were considered the "democracy, trust in institutions and sustainable development, and the capacity to reform". The paper also presented the idea that external policies might have a major impact on the EU's resilience. It could

be observed that, in this paper, resilience was considered to be influenced by a mix of factors as national policies, including the external ones, citizens' trust in public institutions, sustainable economic and social development, and countries' capacity to implement changes in their national systems.

Also, the G20 listed a set of principles for strengthening resilience from an economic perspective. The paper named "Note on Resilience Principles in G20 Economies", approaches five major themes: the external policies, private and public finances, the monetary policy, and the real sector. Moreover, OECD developed a resilience toolkit to help designing and implementing policies that could help strengthening local communities' resilience (OECD, 2014).

3. Resilience and public administration

Public administration is a sector with many peculiarities facing different disruptions, shocks, stressors, and unplanned events. Constant changes in the external environment such as climate change (Fünfgeld and McEvoy, 2012), new diseases (Leach *et al.*, 2010), understaff, low level of funding, or insufficient resources (Lodge and Hood, 2012; Skertich *et al.*, 2013) expose public administration to different risks. Public administration should constantly adapt and embrace change to evolve and ensure highly qualitative services for citizens and enterprises or develop policies for other sectors affected by crises. Consequently, the notion of resilience started to be studied because scholars and practitioners tried to find out how to improve the process of governance in a system characterized by complexity, constant changes, and new challenges (Wildavsky, 1988; Boin *et al.*, 2010; Aldrich, 2012; Boin and van Eeten, 2013).

Initially, the studies regarding public administration were focused on concepts like efficiency and equity, on the best modalities of spending public funds, on delivering the best services for citizens while protecting vulnerable groups. Now, the attention is focused on strengthening public administration resilience, in other words, on making it flexible and adaptable in its response to the new challenges from the internal and external environment (Hood, 1991; Duit and Galaz, 2008). The idea is supported by other authors too, who consider the potential relation between resilience and efficiency, affirming that focusing only on efficiency will make public institutions vulnerable in front of risks (Aligica and Tarko, 2014). Therefore, the need for studying the resilience of public administration appeared and the main question remains: what is either weakening or strengthening public institutions?

Public administration is a complex environment dominated by values such as effectiveness, legitimacy, and, now, resilience. The literature reveals different opinions about the importance of these values. Some authors supported the New Public Management approach which emphasized the importance of effectiveness over resilience and legitimacy and that these values are often in conflict with one another (Hood, 1991, in Duit, 2015), while others (Duit, 2015) considered resilience

as the dominant value, which in their opinion is more important than both effectiveness and legitimacy (Duit, 2015).

In this context, strengthening the institutional resilience of public administration should be one of the first subjects to be analyzed. Public institutions play a major role in the well-functioning of the administrative system and might have an impact on building communities' or regions' resilience. The OECD (2016) considered that "higher-quality institutions (more effective government, a greater voice and accountability, better control of corruption, etc.) benefit from both higher growth and fewer occurrences of severe recessions". This affirmation underlined the importance of public institutions and their impact on the national economies' resilience. Authors (Aligica and Tarko, 2014) affirmed that public institutions are highly important in building the resilience of both economic and social systems. Their structures and functioning influence social and economic development and help in fighting against natural disasters.

Andreas Duit (2015) emphasizes that building resilience in the public administration needs a different approach due to the bureaucratic organization on which the public systems rely now. The author presented the factors on which resilient public administration might lean on: organizing public institutions in non-hierarchical networks that cross the jurisdictions, acquiring different types of knowledge, using different sources of information, involving citizens and different types of stakeholders in the decision-making process, social learning, and experiments involving "trial-and-error policies" (Duit, 2015). It can be observed that the author suggested a different type of administrative organization which is not based on hierarchy and where public institutions create communication networks between all administrative levels, where the public opinion is involved in the decision-making process and the public authorities decide after considering the opinions of various stakeholders such as NGO's or the private sector.

Regarding the institutional resilience in public administration, other authors considered that there is no universal model or reform policy that should be implemented. On the contrary, multiple models and policies should be studied and implemented (John, 2011, in Duit, 2015). While resilience became one of the core values of the public administration, public institutions should try to be flexible and adaptable while being stable, predictable, and efficient (Selznick, 1957; Wildavsky, 1988; Wilson, 1989; March, 1991). Even if flexibility is opposite to stability, the public institutions should embrace both types of behaviors because providing services to citizens presumes the idea of routine and stability, while preparing to act in conditions of major changes or shocks requires flexibility. Even if building resilience might seem a major reform of the administrative institutions, in time, this process will generate routine, and less flexibility and changes will be needed. Furthermore, the effort of building a resilient public administration will generate long-term strategies, bureaucratic norms, procedures, which will lead to reduced flexibility (Stark, 2014).

Also, an OECD study (2016) revealed a correlation between economic development and variables, such as government effectiveness, low corruption, political stability. These findings support the studies which concluded that well-functioning institutions reduce the probability of severe economic shocks (Acemoglu *et al.*, 2003; Rodrik, 1998).

Therefore, making public institutions resilient should be a matter of interest for governments and all public stakeholders. After studying the literature which emphasized the value of resilience in public administration and considering the scarcity of studies regarding public institutions' resilience, it is important to find out the main determinants of institutional resilience in public administration.

4. Research methodology

In order to study public institutions' resilience, it is important to understand which are the main factors that influence and strengthen it. Considering that most of the studies identified in the literature focused on regions' or on economies' resilience, the present study aims to identify the main drivers of institutional resilience and to propose a set of quantitative and qualitative indicators defining these drivers and which might influence, develop and strengthen resilience in the public administration. The study starts from the assumption that, due to the importance of this sector for economic and social development at the national, regional, or local level, a resilient public administration will impact positively the well-functioning, development, and capacity of response to shocks of communities, regions and even of the whole country.

The main objective of the study is to provide a conceptual framework derived from the meta-analysis of existing studies regarding resilience which comprises the main drivers of institutional resilience in public administration and the indicators that define them.

The research methodology consists of an exploratory study conducted by reviewing the literature in this field to establish the most important drivers that might influence and strengthen institutional resilience, which will have a positive impact on the public administration's outcomes. As a result, a conceptual framework including the main capacity factors of institutional resilience and a set of quantitative and qualitative indicators defining these drivers are proposed.

The drivers, as well as the indicators, are grouped in a conceptual framework that could be used in future research on public institutions' resilience and their outcomes. The framework includes 11 capacity factors that can favour, influence, and strengthen institutional resilience: Innovation, knowledge and creativity capacity, Learning capacity, Forecasting, and strategic planning capacity, Adaptive capacity (flexibility) and change management, Capacity of using new technologies, Stakeholders involvement in the decision-making process and in providing services,

Leadership and organizational management quality, Transparency, Human resources quality, Networking, and cooperation capacity, Policies and strategies effectiveness.

5. Developing a conceptual framework of institutional resilience in public administration

Based on the literature regarding the resilience of communities, regions, economies, and institutions, a conceptual framework has been developed in order to define the drivers that influence and strengthen institutional resilience in public administration. The framework can be used in the research aimed to investigate how prepared for future shocks public institutions are. In the context of the medical crisis created by the Covid-19 pandemic and of its economic impact, the public administration must be able to help economies to recover and be prepared to manage new medical and other types of crises that will appear. Also, the framework can be useful for discovering the strengths and weaknesses of the public institutions where it will be applied. Based on a meta-analysis of resilience studies and its drivers, a set of capacity factors that might influence institutional resilience have been identified. Also, for each capacity factor, a series of quantitative or qualitative indicators that define these factors are proposed.

Table 1. Capacity factors of Institutional Resilience

Capacity Factors determining institutional resilience	Sources	Quantitative Indicators	Qualitative Indicators
		Defining Factors	Defining Factors
1. Innovation, knowledge, and creativity capacity	Anttiroiko <i>et al.</i> (2014); Bakiji <i>et al.</i> , (2013); Jucevicius and Galbuogiene, (2012); Bruneckiene, <i>et al.</i> , 2018; Florida (2002); Sotarauta, (2005); Tongyue, Pinyi, and Chaolin, (2014); Hill <i>et al.</i> (2008); Duit, (2015); El Ammar and Profiroiu, (2020).	1.1	Number of projects initiated
		1.2	Number of projects implemented
		1.3	Number of proposals for management improvement
		1.4	Number of innovative methods for problem-solving
		1.5	Share of expenditure for innovative activities
		1.6	Innovation-based development strategy

<p>2. Learning capacity</p>	<p>Onag <i>et al.</i> (2014); Edwards <i>et al.</i> (2014); Florida, (2013), Biggs <i>et al.</i>, (2015), Morgan (2007), Boschma (2004), Rajib (2009), Duit, (2015).</p>	<p>2.1 Number of participants to training courses 2.2 Number of hours of training per employee 2.3 Institution's training policy (internal or external) 2.4 Participation in administrative cooperation programs- national or abroad 2.5 Internal and external training programs</p>
<p>3. Forecasting and strategic planning capacity</p>	<p>Bruneckiene <i>et al.</i> (2018), Camagni and Capello, (2013); Vazquez-Barquero, (2002); Hințea <i>et al.</i> (2015); Antořová <i>et al.</i> (2017); Keban, (2017); Hințea <i>et al.</i> (2019).</p>	<p>3.1 The degree/level of revenue collection 3.2 Number of existent strategies and policies 3.3 Existence of monitoring and evaluation mechanisms 3.4 Existence of key performance indicators 3.5 Number of long-term strategies 3.6 The achievement of the strategic objectives</p>
<p>4. Adaptative capacity (flexibility) and change management</p>	<p>European Commission, (2018).</p>	<p>4.1 Number of procedures simplified 4.2 Share of improved procedures in the total number of procedures 4.3 Number of new initiatives of change management</p>
<p>5. The capacity of using new technologies</p>	<p>Bruneckiene <i>et al.</i>, (2018), the European Commission (2018); Fulga and Profiroiu (2019); Shkarlet <i>et al.</i> (2020).</p>	<p>5.1 The implementation of the documents management system 5.2 Existence of platforms for communication with citizens and enterprises 5.3 Number of Digital public services provided 5.4 Existence of Mechanisms for implementing eGovernment process</p>

		5.5 Existence of Digital systems that allow the exchange of information	
		6.1 Number of projects proposed by citizens	
		6.2 The share of public spending decided by participatory budgeting	
		6.3 The number of participants (citizens, NGOs, professional associations, workers' associations, entrepreneurs' associations) at meetings/debates organized by the institutions.	
6. Stakeholders' involvement in the decision-making process and in providing services	Östh <i>et al.</i> , (2018) Biggs <i>et al.</i> , (2015), Landau (1969); Wildavsky (1988); Comfort (1994), Duit (2015).	6.4 Number of consultations with NGO's, professional associations, unions, entrepreneurs	
		6.5 Number of services provided in partnerships with NGOs (co-production)	
		6.6 Number of debates/meetings with citizens	
			7.3 Diversity of financial and non-financial motivation techniques used
7. Leadership and organizational management quality	Harland <i>et al.</i> , (2005); Sankaran <i>et al.</i> , (2015); Luthans and Avolio, (2003); Kakkar, (2019), Țiclău <i>et al.</i> , (2019); Andrianu (2020).	7.1 Number of brainstorming sessions per month	7.4 Employees' involvement in the decision-making process
		7.2 Annual number of turnovers in management positions	7.5 The leadership styles used by managers
			7.6 The capacity of improvement of personal and collective competencies

		7.7 The capacity of coping with political instability
		7.8 The quality of communication between employees and leaders
		7.9 Team-working development
		7.10 The relationship between managers and employees
		7.11 The usage of delegation for appointing assignments
8. Transparency	Androniceanu, (2011); European Commission, (2018).	8.1 Reports related to access to public information 8.2 Number of public information requests solved in the legal time and a positive manner 8.3 The public information displayed on the institutions' websites 8.4 Number of investment projects displayed on the institutions' websites
9. Human resources quality	Sotarauta, (2005); European Commission, (2018); Camagni and Capello, (2013); Păceșilă and Colesca (2019); Håkansso and Bejaković, (2020).	Number of employees with a bachelor or master degree in public administration or public management 9.2. Existence of the recruiting and promoting strategy 9.3 Number of trained employees per year 9.4 Correlation between employees' skills, competencies, and aptitudes with job descriptions Employees request for training/ exchange programs participation

		Share of employees who achieved their objectives in total employees Ratings achieved at the annual evaluations The existence of balanced participation of men and women in the total number of employees The existence of gender policies
10. Networking and cooperation capacity	Gaule (2014); Kickbusch and Gleicher (2014); Jucevicius and Kinduris (2011); Bruneckiene <i>et al.</i> , (2018), Quick and Feldman (2014); Norris <i>et al.</i> (2008).	10.1 Number of cooperation projects and partnerships between authorities, businesses companies, and non-profit organizations 10.2 Number of active cooperation projects and partnerships between authorities and institutions from other countries 10.5 Transparent and cooperation between the public and private sectors 10.6 Cooperation with other public institutions Internal and external communication systems/procedures ‡ An alert system in case of shocks' striking.
11. Policies and strategies effectiveness	Landau (1969); Wildavsky (1988); Comfort (1994);	11.1 Number of investment projects implemented per year 11.2 Number of implemented strategic projects which will prepare the institution to deal with potential shocks 11.3 Number of projects implemented by external sources of funding

Source: Authors' representation (2020)

The proposed capacity factors will impact the outcomes of public institutions' resilience which can be measured by using indicators regarding citizens' well-being and satisfaction, trust in public institutions, public services' quality, social and economic development, and good governance.

Innovation, knowledge, and creativity capacity as well as the adaptative capacity (flexibility) and change management help at building a public administration which will be oriented to change. Implementing the management of change will make public institutions more adaptable and flexible and more prepared to cope with future shocks. More than that, they will deliver more qualitative services for its citizens, will raise their satisfaction, and their level of trust in the public institutions.

Developing the learning capacity will improve the human resources management, making them more efficient, performant, and prepared for any type of situation. Professionalized human resources will impact positively the quality of public services, will help public institutions to be more prepared for future shocks, will facilitate the transfer of know-how and consequently, trust in public institutions will rise and people will be more satisfied and eager to cooperate with these institutions.

Forecasting and strategic planning capacity and Policies and strategies effectiveness will impact positively the quality of public services and economic and social development. Public administration must be able to develop long-term strategies with an impact on the economic system. Strengthening this capacity will lead to a stronger and resilient economy, prepared to support its working force, vulnerable groups, and business environment in times of crisis and will improve governance.

The capacity of using new technologies helps public institutions to align with technological development, to improve and facilitate the relationship between public administration and its citizens, maintain functional and continuous public services in times of crisis and increase the quality of these services. Also, the use of new technologies will impact the accessibility of public services, will reduce bureaucracy, and will make public administration more efficient and performant.

Stakeholders' involvement in the decision-making process and in providing services is an important factor for good governance (Țiclău *et al.*, 2020). Developing this capacity helps to create networks in which a diversity of knowledge, competencies, resources, and opportunities are brought together, which raises citizens' involvement in the decision-making process, leads to the implementation of collective activities and decisions that will help prevent different types of shocks and eliminate their consequences and further lead to higher satisfaction of the general interest.

Leadership and organizational management quality and human resources quality positively impact the human resources' motivation, their performances and efficiency and consequently help to improve public services' quality and to strengthen the administrative capacity.

Transparency is a capacity factor that can help to reduce corruption, raise citizens' trust in public institutions and their satisfaction, improve social and

economic development, networking and cooperation, thus leading to qualitative public services and finally, helping institutions to be better prepared for shocks.

Strengthening all the mentioned capacity factors will make public institutions more resilient and better prepared for future shocks. In order to measure these factors, qualitative or/and quantitative indicators are provided for each of them. It should be mentioned that collecting these indicators will not be easy, as a part of them are classified as public information, some should be available from documents provided by the public institutions, while others, such as the indicators defining Leadership and organizational management quality, can be collected only by using different research tools such as questionnaires and interviews.

Conclusions and future trends of research

The present study is aimed to create a conceptual framework comprising the main drivers of institutional resilience by taking into consideration multiple determinants. As previous studies have revealed, resilience is a process that must be approached from different perspectives, including all the factors which can influence a system. Considering only an individual factor will not display complete information about the resilience of a system and its manner of reaction when facing a shock. Many studies highlighted the complex nature of this process and the various determinants which must be taken into consideration. Even if scholars and practitioners did not agree on a general definition of resilience, certainly, a resilient system must absorb the shock, adapt, and evolve. These actions imply change, which can only be implemented by adopting the necessary policies and strategies at all levels. The fact that the international forums have integrated resilience in their development objectives and strategies and the existing gap in the literature concerning the methods of strengthening public institutions' resilience designated the importance of this subject for public administration.

Public administration is a complex system where stability is no longer the main characteristic. Considering all the specific features of this field and its major impact on the well-functioning and development of a nation, public administration must be reformed in a resilient manner where change is imminent. Since public administration is a hierarchical system, the resilience of one institution influences the resilience of other institutions.

The proposed framework takes into consideration the specificities of public institutions and proposes the main factors that could define influence and strengthen institutional resilience. The framework will be further used in future research. It will be applied to public institutions, from different administrative levels, to reveal how prepared for future shocks they are and to find new ways of strengthening their resilience in front of economic, medical, cyber-security, or climate change shocks.

Acknowledgment: This work was supported by a grant of the Ministry of Research and Innovation, CNCS - UEFISCDI, project number PN-III-P4-ID-PCCF-2016-0166, within the PNCDI III project “ReGrowEU - Advancing ground-breaking research in regional growth and development theories, through a resilience approach: towards a convergent, balanced and sustainable European Union”.

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