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Which managerial reforms facilitate public sector innovation?

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Abstract

A key question of public sector innovation (PSI) scholarship is: which factors influence innovation? This paper focuses on managerial practices as drivers of PSI and addresses two research questions. First, how have the main types of managerial reforms—pertaining to marketization, results-orientation, and collaboration—influenced PSI? Second, how have different features of public sector reform strategies influenced PSI? Using survey data from 19 European countries, we show that reforms focusing on collaboration and results-orientation facilitate PSI, while marketization-type reforms have no significant impact. Our study indicates that reforms initiated by public administration (rather than politicians) are more conducive to PSI. We also show that reforms that are crisis-driven and reforms oriented toward cost cutting have negative impacts on PSI. Overall, our findings demonstrate that New Public Governance-type reforms exert more positive influence on PSI than NPM-type reforms.

1 | INTRODUCTION

In light of multiple crises, mounting uncertainties, and increasing complexity of problems facing governments across the world, the importance of innovation in the public sector is higher than ever (Borins, 2014; Hartley et al., 2013; Hijal-Moghrabi et al., 2020; Lopes & Farias, 2022; Torfing, 2016, 2019; Van der Voet, 2019). Public sector organizations must juggle increasing expectations of citizens, companies, and other stakeholders about the quality and

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accessibility of public services with heightened scarcity of resources—and it is hoped that innovative solutions can aid this complex balancing exercise (Demircioglu, 2020; Lopes & Farias, 2022; Sorensen & Torfing, 2011; Torfing, 2016; Van der Voet, 2019). In this paper we understand innovation as an "intended but inherently contingent process that involves the development and realization, and frequently also the spread, of new and creative ideas that challenge conventional wisdom and disrupt the established practices within a specific context" (Torfing, 2016, p. 30). Innovation in the public sector can refer to service delivery, processes, and policies (e.g., Torfing, 2016).

A key question of public sector innovation (PSI) scholarship is: which factors influence and drive innovation? (e.g., Andersen & Jakobsen, 2018; Borins, 2014; Cinar et al., 2022; De Vries et al., 2016; Demircioglu & Audretsch, 2017; Houtgraaf et al., 2023). Our analysis focuses on *managerial practices* as drivers of PSI. The potential influence of management practices and reforms on PSI has been pointed out by various studies (Cinar et al., 2022; De Vries et al., 2016; Demircioglu & Audretsch, 2017; Hijal-Moghrabi et al., 2020; Lopes & Farias, 2022; Verhoest et al., 2007; Wynen et al., 2014). Although innovation may be "a multidimensional, complex and potentially chaotic process", it can be regarded as a "systematic activity that is supported by institutional and organizational procedures for exploration and exploitation" (Torfing, 2016: 32 & 42). Management approaches influence rules, standards, and routines which structure the incentives and actions of the actors involved (Lopes & Farias, 2022). Management practices also influence how and to what extent public sector organizations learn (Andersen & Jakobsen, 2018), which is an important step in the innovation process.

Our research questions are as follows. First, how have the main types of managerial reforms—pertaining to marketization, results-orientation, and collaboration—influenced PSI? While marketization and results-orientation characterized New Public Management (NPM) reforms, the reforms inspired by New Public Governance (NPG) emphasized improving collaboration in the public sector (e.g., Entwistle & Martin, 2005; Hartley et al., 2013; Osborne, 2006; Torfing & Triantafillou, 2013; Van de Walle & Hammerschmid, 2011). Second, how have different features of public sector reform strategies influenced PSI? We are interested in the impacts of the following characteristics: reforms driven by politicians versus civil servants, crisis-driven versus planned reforms, and reforms focusing on cost-cutting versus service improvement. We examine these questions using survey data from 19 European countries.

Although scholarship on PSI has grown dramatically over the past decades, there are gaps in the literature. Cinar et al. (2019, 2022, 2023) point to the lack of cross-national and quantitative studies as a major gap. This is particularly true concerning the question of how managerial reforms affect PSI. Indeed, while we have theoretical conjectures about how different managerial reforms influence PSI, we still lack comparative and quantitative empirical evidence that would help verify these propositions. Thus, our study contributes to the PSI literature in the following ways. First, few cross-national quantitative studies have explicitly tested the impact of managerial reforms on PSI. Wynen et al. (2014) examined the effects of managerial autonomy and results-orientation on innovation culture in agencies of five different European countries. Laegreid et al. (2011) investigated the impacts of stronger incentives for results on innovation in Flemish and Norwegian agencies. Cinar et al. (2022) examined the impacts of administrative context and other factors on different PSI types in Italy, Japan, and Turkey. Cinar et al. (2023) studied the effects of different collaborative governance arrangements across innovation cycles in the same three countries. Our research adds to these studies by examining a larger set of countries (19 European countries), a broader set of managerial reforms, and a wider range of organizations (not only agencies but also ministries). Second, although the literature on PSI has been vocally pointing to the advantages of NPG-type reforms over NPM-reforms in fostering innovation (e.g., Hartley et al., 2013), none of the existing cross-country large-N studies have examined it explicitly. Our study is the first one to do that. Third, none of the existing cross-country studies has systematically investigated the effects of various reform-orientations (like crisis-driven vs. planned reforms, and cost-cutting vs. service improvement orientations) on PSI. By investigating these links in our study, we hope to offer a more comprehensive understanding of the links between public sector reforms and PSI.

European countries offer a suitable setting for examining the research questions we pose. Over the past decades, European governments have undertaken various waves of managerial reforms, albeit to varying degrees.

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Thus, the COCOPS dataset we use for our analysis offers a unique opportunity to gauge the effects of different types of managerial reforms on innovation. The paper is structured as follows. Section 2 provides the theoretical discussion and outlines our hypotheses. Section 3 explains the data and methods. Section 4 presents the results, Section 5 discusses our findings, and Section 6 concludes.

2 | THEORETICAL DISCUSSION AND HYPOTHESES

Our theoretical discussion is developed in two parts, corresponding to the two research questions. Section 2.1 outlines the expectations of how different managerial reforms may influence PSI. We first look at the key sets of reforms promoted by NPM: marketization and results-orientation (Sections 2.1.1 and 2.1.2, respectively). Although the heyday of NPM "lies behind us, it remains one of the most powerful reform doctrines to have reshaped the public sector in OECD countries and beyond" (Wynen et al., 2014: 46); thus, it is important to discuss how these reforms affect PSI. Section 2.1.3 will, in turn, zoom in on the key reform direction promoted by NPG: increased collaboration. In Section 2.2 we develop hypotheses about how different reform orientations influence PSI. While Section 2.1. focuses on specific reform *instruments*, Section 2.2. deals with more general reform *orientations* that drive the adoption of managerial reforms.[1]

2.1 | Impacts of marketization, results-orientation, and improved collaboration on PSI

2.1.1 | Marketization reforms

The part of NPM doctrine that was inspired by public choice theories highlighted the importance of market-like mechanisms in fostering innovation (e.g., Hartley, 2005; Wynen et al., 2014). It criticized the inertia, rigidity, and lack of flexibility of classical hierarchical public administration structures (which emphasized compliance and control) and proposed that bringing in elements of marketization would incentivize public sector innovation (Hartley, 2005; Hartley et al., 2013; Hijal-Moghrabi et al., 2020). More specifically, according to the NPM doctrine, it could be expected that marketization reforms create competitive pressures, providing public sector organizations with incentives to improve services and increase responsiveness, which in turn can be expected to spur innovation (Borins, 2001b; Korac et al., 2017; Torfing, 2019; Verhoest et al., 2007).

Marketization reforms proposed by NPM included the creation of autonomous agencies, contracting out public services, and privatization (e.g., Van de Walle & Hammerschmid, 2011). In theory, these reform instruments can foster PSI through following two mechanisms: *enabling* PSI and *exerting pressure* to be more innovative (e.g., Laegreid et al., 2011; Verhoest et al., 2007; Wynen et al., 2014).

First, we can expect that autonomous agencies have more freedom in their decision-making to undertake innovative activities (Laegreid et al., 2011; Wynen et al., 2014). For example, devolved agencies are likely to have more flexibility to deploy resources and direct funds and employee time to innovation (Hartley et al., 2013; Hijal-Moghrabi et al., 2020; Wynen et al., 2014). In autonomous agencies or public corporations, managers are less likely to be held back by various sets of rules, constraints, and red tape in searching for and trying out new solutions (Verhoest et al., 2007).

Second, while increased autonomy *enables* and *empowers* organizations to be more flexible (Laegreid et al., 2011), privatization and contracting out can be expected to *create pressures* to be more innovative through inserting competition into hitherto monopolistic situations (e.g., Hartley et al., 2013; Hijal-Moghrabi et al., 2020; Verhoest et al., 2007). Competition may challenge the "dominant powers and authorities that are often in favour of maintaining the status quo" (Torfing, 2019, p. 3). Instilling competitive pressure can shake public organizations from their rule-bound inertia and trigger more dynamic ways of doing things (Sorensen & Torfing, 2011). When faced with

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competition, organizations could view PSI as a path to gaining competitive advantage vis-à-vis other service providers (Verhoest et al., 2007). For example, contracting out public services creates competition between the contractors, and they may use innovation to gain advantages in winning the contracts (Hartley et al., 2013; Verhoest et al., 2007). Furthermore, when there are several providers offering the same service, consumer choice can inflict pressure to innovate. Since consumers can choose another provider when dissatisfied with service, organizations may feel pressure to innovate to attract and maintain customers (Hartley et al., 2013). In sum, marketization type reforms are expected to shift public managers' attitudes toward change and risk taking—both important preconditions for innovative activities (Wynen et al., 2014).

Several empirical studies support these claims. Verhoest et al. (2007) present evidence of the positive effects of competitive mechanisms on innovation in Flemish public sector organizations. Hijal-Moghrabi et al. (2020) find in their study of five US states that NPM-type reforms (including outsourcing and contracting out) stimulate innovation. Wynen et al. (2014) conclude that high financial management autonomy and personnel autonomy facilitated PSI in agencies in five European countries.

Thus, our first hypothesis is:

> **Hypothesis 1.** (H1) The more prevalent marketization reforms are within a policy field, the higher the level of PSI.

There are several ways, however, how marketization-type reforms could pose obstacles to PSI and H1 may not hold. The creation of autonomous agencies can create structural divisions of labor in the public sector, and this can pose obstacles to innovation (Hartley et al., 2013). Competition may make organizations reluctant to share information and knowledge, which can inhibit PSI via hindering inter-organizational learning (Hartley et al., 2013; Torfing, 2019). Competition-oriented arrangements may also undercut "favorable ways of sharing the costs, risks, and benefits of innovation" (Sorensen & Torfing, 2011: 845).

2.1.2 | Reforms focusing on outcomes and results

Another reform instrument advocated by the NPM doctrine was performance management (e.g., Borins, 2014; Laegreid et al., 2011; Verhoest et al., 2007; Wynen et al., 2014). As in the case of marketization reforms, increasing results-orientation in public management can be expected to both *enable* and *exert pressure on* public sector organizations to be more innovative.

When public organizations are freed from detailed input controls and are made accountable for outcomes, they may have more freedom to decide how to allocate resources, thus opening avenues for innovation (Hartley et al., 2013; Laegreid et al., 2011). A results-orientation can also be expected to increase pressure for organizations to be more innovative (Demircioglu & Audretsch, 2017; Laegreid et al., 2011; Verhoest et al., 2007; Wynen et al., 2014). Public scrutiny of agencies' performance can, therefore, drive innovation (Torfing, 2016). When public managers know that their organizations are evaluated on the basis of outcomes and results and are made accountable for the results they achieve, they are more motivated to utilize innovation to achieve their goals (Demircioglu & Audretsch, 2017; Hartley et al., 2013; Laegreid et al., 2011; Verhoest et al., 2007; Wynen et al., 2014).

Furthermore, performance management can foster organizational learning, which can facilitate PSI (Sorensen & Torfing, 2011). Performance information may provide useful cues about the internal and external environment, which help to diagnose potential problems and identify needed changes (Park et al., 2021). Identification of performance gaps can trigger critical reflections on shortcomings, which may provide the necessary impetus for innovation (Andersen & Jakobsen, 2018; Demircioglu & Audretsch, 2017; Fernandez & Wise, 2010; Hartley et al., 2013). Performance targets can also help redefine what "success" means and through that trigger innovative activities when organizations try to become more successful (Demircioglu & Audretsch, 2017; Wynen et al., 2014). Conversely, when

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organizations do not focus on results, they may be underperforming for a while before pressure emerges to innovate—thus, more visibility given to results and outcomes creates pressure to perform better (Borins, 2001b).

In empirical studies, stronger incentives related to achieving results were found to foster innovation in Flemish organizations (Verhoest et al., 2007) and in Flemish and Norwegian agencies (Laegreid et al., 2011), although in the latter it was found to have a more indirect effect. Hijal-Moghrabi et al. (2020) conclude, in their study of five US states, that NPM-type reforms, including reforms emphasizing outputs and outcomes facilitate PSI.

Thus, our second hypothesis is:

> **Hypothesis 2.** (H2) The more prevalent that reforms focusing on outcomes and results are in a policy field, the higher the level of PSI.

There are, however, theoretical mechanisms through which performance management reforms may dampen PSI. First, if performance management systems become excessively elaborate and overwhelm organizations with performance indicators, targets, and benchmarks; this may add to costs (related to data collection and analysis), diverting time, attention, and funds away from innovative activities (Hartley et al., 2013; Sorensen & Torfing, 2011; Torfing, 2016). Second, performance indicators can be used in an overly static fashion, in which case they can entrench existing practices rather than trigger innovation (Laegreid et al., 2011). Third, as novel ways of working may trigger an initial performance dip, organizations may become hesitant to embrace innovation to avoid declines in their performance indicators (Hartley et al., 2013; Wynen et al., 2014). Fourth, performance management may create an environment that punishes errors instead of rewarding excellence, leading to stifling effects on innovation (Park et al., 2021; Wynen et al., 2014).

2.1.3 | Reforms fostering collaboration

The NPM reforms promoting disaggregation, specialization, and competition led to fragmented government action (Christensen & Laegreid, 2007; Van de Walle & Hammerschmid, 2011). As Cejudo and Michel (2017: 747) put it, even if "some simple, one-dimensional problems could be solved by specialized government interventions, problems that are more complex may not." Thus, in response to the criticisms pointing to various adverse effects of NPM, more recent public management reforms—under the umbrella term of New Public Governance—have argued for improving collaboration instead of competition in the public sector (e.g., Cejudo & Michel, 2017; Christensen & Laegreid, 2007; Hartley et al., 2013; Van de Walle & Hammerschmid, 2011).

According to the theory of *collaborative innovation*, which draws on theories of network governance (e.g., Koppenjan & Klijn, 2004) and learning (Engeström, 2008), collaboration between various actors is key to facilitating PSI (e.g., Hartley et al., 2013; Houtgraaf et al., 2023; Sorensen & Torfing, 2011; Torfing, 2016, 2019). Collaborative innovation envisions bringing together various stakeholders from the public and private sectors, as well as users and citizens in interactive arenas (Cinar et al., 2023;Hartley et al., 2013; Torfing, 2016). Collaboration can facilitate innovation in several ways.

First, collaboration can facilitate communication, the creation of trust, and mutual understanding between different actors and organizations—which in turn facilitate efforts in joint innovation (Cinar et al., 2023; Sorensen & Torfing, 2011; Torfing, 2019). Collaboration can help identify common problems and resource dependencies between the organizations, and through that provide incentives for innovative efforts (Cinar et al., 2023; Torfing, 2019).

Second, collaborative arrangements with other organizations and citizens can foster *learning* through creating feedback loops (Hartley et al., 2013; Sorensen & Torfing, 2011; Torfing, 2016, 2019). Such feedback loops can shed light on problems associated with existing practices, instruments, and processes, identify shortcomings and previously undetected or changing needs, and prompt searches for alternative solutions that can then be jointly

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explored (Torfing, 2016, 2019). Through collaborative governance arrangements, the actors involved can pool knowledge, competencies, and ideas, which can aid in both identifying and understanding problems and offering innovative solutions (Cinar et al., 2019; Demircioglu and Audretsch 2020; Torfing, 2016, 2019). Broader knowledge bases can facilitate mutual learning (Demircioglu and Audretsch 2020; Sorensen & Torfing, 2011; Torfing, 2019). Learning from users of public services can help improve them based on feedback and criticism (Lopes & Farias, 2022; Sorensen & Torfing, 2011). Furthermore, "the selection, prototyping, and testing of promising ideas is strengthened when diverse actors help assess gains and risks" (Hartley et al., 2013: 826).

Third, collaboration can facilitate *creativity* in problem solving. Diversity of perspectives in problem solving facilitates kaleidoscopic thinking and cross-fertilization of different insights, which help to generate a richer set of solutions to given problems (Borins, 2001a, 2001b; Cinar et al., 2023; Houtgraaf et al., 2023; Torfing, 2016, 2019). By leveraging a more diverse set of ideas and skills and combining them, collaboration can help to challenge habituated practices and common wisdom, transform and integrate the creative ideas into novel solutions, and thus lead to greater innovation (Hartley et al., 2013; Sorensen & Torfing, 2011; Torfing, 2016, 2019).

Fourth, collaboration increases the sharing of risks and costs of innovation (Hartley et al., 2013; Sorensen & Torfing, 2011; Torfing, 2019). Collaboration can help mobilize resources necessary for developing and implementing innovations (Torfing, 2019). Having more actors involved through collaboration can spread the perceived potential costs of failure, and through that make public sector organizations more willing to take on risks associated with innovation (Hartley et al., 2013; Torfing, 2016).

In sum, each of the phases in the innovation cycle (generation of ideas, selection, implementation, dissemination of new practices) can be strengthened through collaboration between relevant and affected actors (Cinar et al., 2023; Sorensen & Torfing, 2011; Torfing, 2016).

The empirical evidence base of collaborative innovation has been growing over the past years. In his longitudinal study of public sector innovation awards, Borins (2014) observed increased collaboration among successfully innovating organizations. In their systematic review of literature, Cinar et al. (2019) identified inadequate involvement of citizens as one of the key barriers to PSI. Cinar et al. (2023) show how the nature of collaborative innovation varies in different countries (Italy, Japan and Turkey) and across different stages of the innovation process. De Vries et al. (2016) find, in their literature review, that participation in networks and interorganizational relationships has been identified as an antecedent to public sector organizations in 21 studies (out of 77).

Our third hypothesis is as follows:

> **Hypothesis 3.** (H3) The more prevalent that reforms facilitating collaborative governance are in a policy field, the higher the level of PSI.

2.2 | Impacts of reform orientations on PSI

The overall reform strategies may be relevant for PSI. In this section, we discuss the impacts of different possible reform orientations on PSI.

2.2.1 | Initiation of reforms by politicians versus civil servants

It may be relevant for PSI whether reforms are predominantly initiated by politicians or civil servants (Kuipers et al., 2014). There are several reasons why we would expect reforms initiated by civil servants to be more conducive to PSI than those initiated by politicians.

First, reforms initiated by civil servants may have *informational* advantages. Public servants are closer to the operations and may have a better sense of what kinds of reforms organizations need—which may, in turn, create

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more favorable conditions for innovation (Borins, 2001b). Thus, civil servants may be better able to take into account the complexity and dynamism inherent in societal developments, providing more fertile ground for innovative activities (Sorensen & Torfing, 2011). At the same time, politicians may lack strategic competencies and "feel disempowered by global economic pressures, a scandal-focused mass media, information-overload, and a shortage of knowledge" (Torfing & Ansell, 2017: 38), all of which may not be conducive to reforms that facilitate innovation.

Second, reforms initiated by civil servants may be driven by incentives more favorable to innovation, as they are likely to be more strategic and forward-looking than those launched by politicians, which tend to be more short-term in their focus (Korac et al., 2017). As Torfing and Ansell (2017): 40) put it, "Ongoing mediatization of society and politics has created a drama democracy that places a high premium on personal point scoring, political conflict and rivalry, populist rhetoric and short-term solutions that hardly match the problems at hand". Reforms driven by such motives may not offer fertile ground for PSI. Furthermore, managerial reforms initiated by politicians may be more susceptible to reversals (when new governments get into office), and this may prevent the cultivation of sustained frameworks for PSI.

Thus, our fourth hypothesis is:

> **Hypothesis 4.** (H4) The more reforms are driven by administrators as opposed to politicians, the higher the level of PSI.

On the other hand, politicians, who are accountable to the public, may be more responsive to the needs of society. Thus, they may want to advance new ideas when competing for votes and hence create a more favorable environment for innovation by initiating reforms (Borins, 2001b, 2014; Hartley et al., 2013; Korac et al., 2017; Sorensen & Torfing, 2011). Additionally, when reform initiatives come from politicians, they are more likely to commit resources to those reforms (Andersen & Jakobsen, 2018; Borins, 2014; Torfing & Ansell, 2017), in which case conditions for innovation may be more favorable.

2.2.2 | Crisis-driven versus planned reforms

The existing literature offers competing propositions about how crisis settings and crisis-driven reforms can influence PSI. On the one hand, crises generate dissatisfaction and as a result, can create a sense of urgency for change (Borins, 2001b; Soresensen and Torfing, 2016; Torfing, 2016; Van der Voet, 2019). A search for new ideas is more likely when public actors are dissatisfied with the existing state of affairs and perceive failures of existing solutions (Van der Voet, 2019). Public officials are more likely to embrace potentially disruptive innovations when there is pressure to cope with a crisis or avoid a future one (Torfing, 2016).

On the other hand, there are several mechanisms through which crises and crises-driven reforms can hamper PSI. First, crises reduce the amount of cognitive space available for exploring and testing new ideas because they force public officials to focus on acute problems and hence shorten the time-horizons. Innovation usually entails defining problems, gathering knowledge, exploring different options, and implementing new practices (e.g., Torfing, 2016), all of which need cognitive space. Second, crises can strengthen external demands for "secure administration and fail-safe service production", which can reduce the prospects for innovation (Hartley et al., 2013: 827). Third, according to threat-rigidity theory (Staw et al., 1981), crises are often perceived as threats, which trigger uncertainty and stress among employees (Wynen et al., 2020). Thus, crises may trigger higher levels of rigidity in organizational climates to deal with uncertainty and stress (Van der Voet, 2019). This, in turn, may hamper PSI because innovation could be perceived as increasing uncertainty (Wynen et al., 2020). Furthermore, threat-rigidity theory predicts that the perception of threats triggers increased centralization of control and formalization (Muurlink et al., 2012; Raudla et al., 2015), both of which can stifle innovative behaviors (Van der Voet, 2019; Wynen et al., 2020).

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Thus, our fifth hypothesis is:

Hypothesis 5. (H5) Crisis-driven reforms are associated with lower levels of PSI.

2.2.3 | Reforms driven by cost-cutting versus service improvement

Similar to the discussion about crisis-driven reforms, there are contradictory lines of argument about the impacts of reforms driven by cost-savings. From one angle it is argued that resource scarcity and the need to generate savings would trigger PSI by creating pressures to find alternative solutions that can lower costs (Borins, 2001b; Demircioglu & Audretsch, 2017; Hartley et al., 2013; Lopes & Farias, 2022; Sorensen & Torfing, 2011; Torfing, 2016; Van der Voet, 2019). If public officials are asked to undertake the same (or more) tasks with lower budgets, they must search for new ways of doing things, making innovation a necessity (Demircioglu & Audretsch, 2017).

However, there are multiple mechanisms through which reforms driven by cost-cutting and savings can dampen PSI. First, such reforms may reduce organizational slack that would be needed for PSI. If there are no slack resources available, it may be difficult to find funding for innovative initiatives (Cinar et al., 2022; Fernandez & Wise, 2010; Van der Voet, 2019). Moreover, innovation usually entails the risk of failure, and fiscal slack is necessary for absorbing the costs of such failures (De Vries et al., 2016; Khanal, 2022; Laegreid et al., 2011; Torfing, 2016). Budgetary slack also offers resources for procuring necessary expertise and covering the costs of implementing innovative solutions (Laegreid et al., 2011). Although cost cutting may free up slack that could be used for innovative activities, using such avenues for funding innovations is uncertain (Borins, 2001b). If, however, reforms are driven by motives of service improvement, this may offer a more hospitable environment for funding innovations.

Second, "concern for great cost efficiency tends to marginalize discussions of the content and quality of public services", which can be detrimental to innovation (Torfing, 2013: 302). If reforms are oriented to cost savings, they are likely to try to rationalize "work processes in relation to predefined service" rather than trying to "produce innovation services or create entirely new service systems by reframing problems or goals" (Hartley et al., 2013: 825). Third, when reforms are driven by cost savings, there may be less focus on increasing human capital and insourcing relevant external knowledge, both of which may affect innovative activities in the organization (Khanal, 2022).

The availability of slack resources was identified as an antecedent to innovation in 30 of the 134 studies examined in the systematic literature review by De Vries et al. (2016).

Thus, our final hypothesis is:

Hypothesis 6. (H6) The more reforms are driven by cost-cutting and savings, the lower the level of PSI.

3 | DATA, VARIABLES, AND METHOD

3.1 | Data source

The data come from the established Coordinating for Cohesion in the Public Sector of the Future (COCOPS) dataset (Hammerschmid et al., 2013).[2] This dataset was created from a survey of top executives in the public sector in 19 European countries (Austria, Croatia, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Lithuania, the Netherlands, Norway, Portugal, Serbia, Spain, Sweden, and the UK). The survey was administered in several rounds from 2012 to 2014. From a sampling frame of 25,044 senior level executives, 7077 executives responded for a response rate of 28.3%.

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3.2 | Variables and operationalization

Many studies have used the COCOPS data to analyze a variety of managerial practices and tools used in the public sector (e.g., George et al., 2019; Mohr et al., 2021; Raudla et al., 2015). In this article, we are primarily interested in how the public sector has performed with regard to PSI. Our dependent variable is one of the questions in the COCOPS survey where managers were asked: "Thinking about your policy area over the last five years how would you rate the way public administration has performed on the following dimensions?" The items the respondents were asked to rate included various desirable dimensions of performance like policy effectiveness, social cohesion, transparency, and one of the items was "Innovation". The outcome is a seven-point Likert scale, which ranges from 1 (Deteriorated significantly) to 7 (Improved significantly). Thus, the question captures the perception of managers with regard to whether the level of PSI (as a desirable performance outcome) in their policy area has improved or deteriorated—that is, we define "improvement" as achieving a higher level of PSI, and "deterioration" as achieving a lower level.

The first hypothesis (H1) concerning *marketization reforms* is tested using an additive index of questions that concern marketization. The items that make up this index come from a series of questions that ask respondents to rate "How important are the following reform trends in your policy area?" on a seven-point Likert scale (1 = Not at all; 7 = To a large extent). Fifteen reform trends were listed. We used the four most market-oriented reforms: Public sector downsizing, Creation of autonomous agencies or corporatization, Contracting out, and Privatization. The final index ranges from a low marketization of 4 to a high of 28, and the final index has a Cronbach's alpha of 0.800 (Table 1).

The independent variable used for the second hypothesis (H2) concerning *reforms focusing on outcomes and results* uses the same reform question (i.e., How important are the following reform trends in your policy area?). Only one reform trend, "Focusing on outcomes and results" is used for this variable. Thus, it ranges from 1 to 7.

The third independent variable (testing H3) is also an additive index of four *reforms that facilitate collaborative governance*. These items use the reforms question (i.e., How important are the following reform trends in your policy area?). The reform trends included in the index are "Citizen participation methods/initiatives", "Treatment of service users as customers", "Collaboration and cooperation among different public sector actors", and "External partnerships and strategic alliances". Since it uses the seven-point Likert scale that ranges from 1 (Not at all) to 7 (To a large extant), the collaboration variable ranges from 4 to 28 and has a Cronbach's alpha of 0.705.

The fourth independent variable (testing H4) concerns *reforms driven by administration*, and comes from a question that asks the respondent to indicate their view on "The administration and not the political level is the initiator of reforms or new policies". This seven-point Likert scale ranges from 1 (Strongly disagree) to 7 (Strongly agree).

The fifth independent variable (testing H5) concerns *crisis driven reforms*. Respondents were asked to indicate the extent to which reform tendencies in their policy area were either "Crisis and incident driven" or "Planned". The response options are on a 10-point Likert scale that ranges from 1 (Crisis and incident driven) to 10 (Planned). This variable was reverse coded so that the scale used in the analysis ranges from 1 (Planned) to 10 (Crisis and incident driven).

The sixth independent variable (testing H6) concerns *reforms driven by cost cutting*. Respondents were asked to indicate the extent to which reform tendencies in their policy area were "About cost cutting and savings" versus "About service improvement". This variable was also reverse coded so that the scale used in the analysis ranges from 1 (About service improvement) to 10 (About cost cutting and savings).

In terms of model controls, we use the measure of fiscal stress developed by Mohr et al. (2021). This additive index is comprised of the nine items listed in a question block that asks "In response to the fiscal crisis, to what extent has your organization applied the following cutback measures?" and then lists nine items such as staff layoffs, hiring freezes, and pay cuts. Since it is a nine-item question block, and it is measured on a seven-point Likert scale, the final index ranges from 9 (low fiscal stress) to 63 (high fiscal stress). We also include the policy area in which the executive works to control for differences across policy fields.

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TABLE 1 Descriptive statistics of outcome and model variables.

	Name of variable	Mean	SD	Min	Max	1	2	3	4	5	6	7	8
1	Public sector innovation	4.54	1.35	1	7	-							
2	Marketization reforms	14.31	4.60	4	28	0.043*	(0.800)						
3	Outcome and result reforms	5.25	1.55	1	7	0.164*	0.501*	-					
4	Collaborative governance reforms	18.71	4.96	4	28	0.219*	0.106*	0.511	(0.705)				
5	Administrative driven reforms	4.12	1.63	1	7	0.137*	−0.112*	0.1026	0.098*	-			
6	Crisis-driven reforms	6.24	2.51	1	10	−0.202*	−0.089*	−0.125	−0.108*	−0.140*	-		
7	Cost cutting reforms	7.08	2.42	1	10	−0.174*	−0.035*	−0.112	−0.107*	−0.070*	0.386*	-	
8	Fiscal stress	33.98	10.91	9	63	−0.035*	0.188*	−0.045	0.010	0.016	0.146*	0.241*	(0.766)

Note: Alpha values of index variables on the diagonal in parentheses;
*$p < .05$, $n = 3969$.

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3.3 | Method

The method of analysis is linear regression using ordinary least squares (OLS). In this case, we have a dependent variable that ranges from 1 to 7 and would violate the OLS assumption of an unbounded dependent variable. Importantly, the alternative methodologies (ordered probit or logit) also have problems (Winship & Mare, 1984). Ordered regression models assume errors that are logistically distributed for logit and normally distributed for probit. Violations of these assumptions influence the bias of the parameter and tests of significance. OLS regression, however, is the best linear unbiased estimator (BLUE) even with modest violations of the Gauss-Markov assumptions. Therefore, OLS with a restricted dependent variable only affects the significance tests and does not bias the estimator. For these reasons and ease of interpretation, the model is estimated with OLS using country fixed effects. We also run ordered logit models and linear models with cluster standard errors as robustness checks on the reported model.

4 | ANALYSIS

4.1 | Country averages

As can be seen in Table 2 and Figure 1, the respondents in every country on average tended to perceive that PSI had improved (i.e., achieved a higher level) in their policy areas. The scale is 1 (Deteriorated significantly) to 7 (Improved significantly) with a 4 being exactly in the middle of the outcomes, which is presumably no change. The lowest scorer on innovation is Croatia with a mean of 4.047 and the highest scorer is Ireland with a mean of 4.914. However, this relative parity of the mean scores masks significant within country heterogeneity. For example, both Croatia and Ireland have a minimum score of 1 on the measure and a maximum score of 7. However, Ireland does have slightly less spread around its mean relative to a country like Croatia which has the greatest spread as measured by its standard deviation. These observations are made to note that while there is not much difference between the countries, there is considerable difference within countries, and the question of what leads to the differences in the change in PSI is an important one.

4.2 | Multivariate analysis

The results of the OLS model are found in Table 3 and the results support five out of our six hypotheses. Some of the management practices did not lead to improvements in the level of PSI and some variables reduced the level of PSI over the previous 5 years.

Of the main types of management reforms and their effect on innovation, two out of three of the hypotheses were supported. The first hypothesis that *marketization reforms* would lead to a higher level of innovation was not supported. As can be seen in Table 3, the marketization variable is negative and not significantly related to the innovation outcome measure. The other two hypotheses (H2, H3) were supported. The second hypothesis concerning *reforms that focused on outcomes and results* was supported and shows that such reforms were associated with higher levels of PSI ($p < 0.05$). The third hypothesis that *collaborative governance reforms* should lead to greater levels of PSI was supported with a positive and statistically significant beta coefficient ($p < 0.001$).

The second group of hypotheses about the different features of public sector reform strategies were all supported. The fourth hypothesis that the more reforms are *driven by administrators as opposed to politicians*, the higher the level of PSI was also supported with a positive and statistically significant beta coefficient ($p < 0.001$). The fifth and sixth hypotheses that *crisis driven reforms* and *cost cutting reforms* lead to lower levels of PSI were also supported with negative and significant beta coefficients ($p < 0.001$).

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TABLE 2 Average change in public sector innovation by country.

Country	Mean	SD	Observations
United Kingdom	4.700	1.191	233
Germany	4.715	1.155	410
France	4.299	1.404	502
Spain	4.270	1.576	259
Italy	4.848	1.500	151
Estonia	4.718	1.268	277
Norway	4.534	1.018	296
Serbia	4.498	1.596	797
Netherlands	4.740	1.108	181
Hungary	4.268	1.417	213
Austria	4.841	1.148	435
Portugal	4.914	1.344	243
Lithuania	4.778	1.323	360
Ireland	4.855	1.357	325
Sweden	4.289	1.230	454
Denmark	4.731	1.140	130
Finland	4.445	1.168	640
Iceland	4.473	1.518	188
Croatia	4.047	1.619	150
Total	*4.561*	*1.349*	*6244*

Underlined indicates the last individual country.

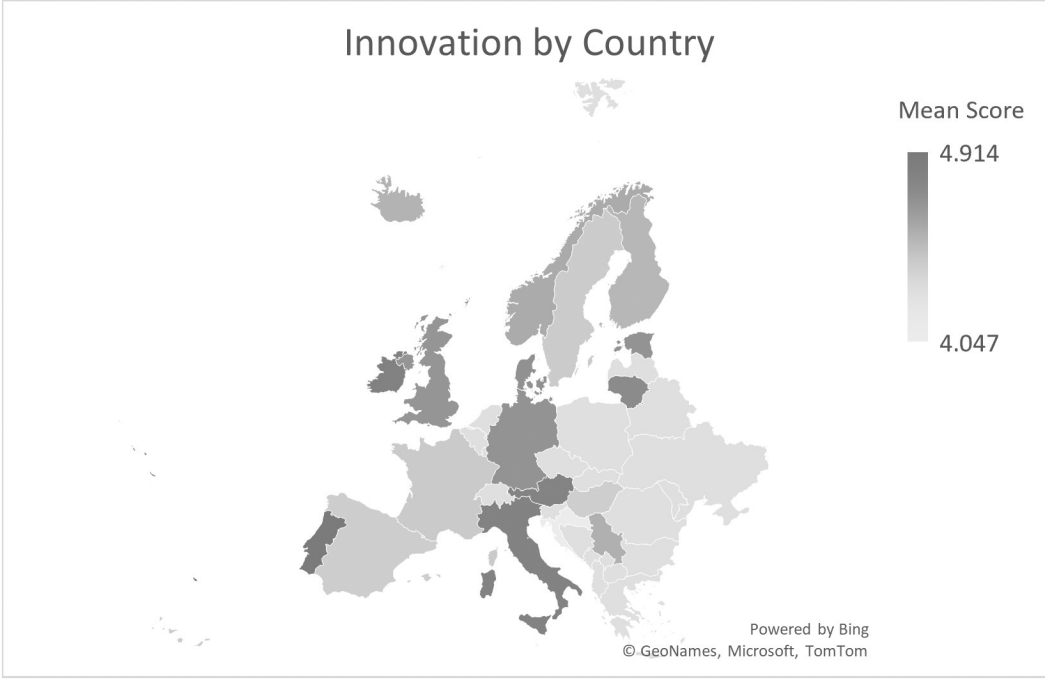

FIGURE 1 Average change in PSI by country.

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TABLE 3 Predictors of public sector innovation (OLS model).

	B	S.E.		Beta
Marketization reforms	−0.004	0.005		−0.012
Outcome and result reforms	0.043	0.016	**	0.050
Collaborative governance reforms	0.049	0.005	***	0.179
Administrative driven reforms	0.063	0.013	***	0.078
Crisis-driven reforms	−0.080	0.009	***	−0.149
Cost cutting reforms	−0.054	0.009	***	−0.097
Fiscal stress	−0.009	0.002	***	−0.069
Foreign affairs	0.056	0.122		0.008
Finance	0.018	0.095		0.004
Economic affairs	−0.172	0.096		−0.035
Infrastructure and transportation	−0.395	0.104	***	−0.071
Defense	−0.246	0.149		−0.027
Justice, public order & safety	−0.118	0.093		−0.026
Employment services	−0.356	0.108	**	−0.061
Health	−0.306	0.109	**	−0.051
Other social protection and welfare	−0.083	0.109		−0.014
Education	−0.219	0.100	*	−0.042
Environmental protection	−0.144	0.113		−0.023
Recreation, culture, religion	−0.446	0.129	**	−0.058
Other policy areas	−0.196	0.119		−0.029
Multiple policy areas	−0.262	0.083	**	−0.069
Constant	4.722	0.292	***	-
N	3969			
Adj. R^2	0.139			

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Of the significant variables, collaborative governance reforms had the largest positive effect size on the change in PSI with a one standard deviation increase in collaborative governance leading to a 0.179 standard deviation increase in PSI. The largest negative effect (and second largest effect overall) was the effect of crisis driven reforms, which shows that a one standard deviation increase in the crisis driven reform response leads to a −0.149 standard deviation decrease in the level of PSI.[3]

The controls that were significant were fiscal stress and six of the policy areas. Fiscal stress on the organization was negatively related to PSI and statistically significant ($p < 0.001$). The policy areas that were different from the baseline category of general government—and showed less improvement in PSI—were infrastructure and transportation, employment services, health, education, the policy area of recreation, culture and religion, and services in multiple policy areas. This finding indicates that in comparative studies of PSI in different countries, it is pertinent to control for policy area. Innovations in different policy areas may face different challenges and opportunities (Borins, 2014), which can influence the pace of improvement. Also, in some policy areas, the low-hanging fruit opportunities for innovation might have already been utilized and further improvements may become more challenging. Different policy areas may be differently affected by cutbacks and austerity measures, influencing the amount of budgetary slack they have available for innovation (e.g., Van der Voet, 2019).

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5 | DISCUSSION

Our empirical findings largely confirm the hypotheses put forth in the theoretical discussion. Hypotheses predicting that PSI would be facilitated by managerial reforms focusing on outcomes and results (H2) and reforms promoting collaborative governance (H3) were both confirmed. Thus, we corroborate the findings of the existing small-N studies that found that PSI is facilitated by reforms focusing on results and outcomes (Laegreid et al., 2011; Verhoest et al., 2007). Our empirical results also reinforce the growing body of literature that points to the beneficial effects of collaborative governance reforms on PSI (e.g., Borins, 2014; Cinar et al., 2019; De Vries et al., 2016).

The only hypothesis that was not confirmed (H1) pertained to the prediction that marketization reforms facilitate PSI. Our finding that marketization reforms have not had a significant effect on PSI presents contrary evidence to some of the existing empirical studies (Hijal-Moghrabi et al., 2020; Verhoest et al., 2007; Wynen et al., 2014). At the same time, that finding is not surprising given that there are theoretical arguments pointing to countervailing effects of marketization-type reforms on PSI (Hartley et al., 2013; Sorensen & Torfing, 2011; Torfing, 2019). Indeed, reforms that instill competitive mechanisms into the public sector context may crowd out collaboration and thus inhibit PSI. For example, organizational learning can be undermined if competitive pressures constrain the sharing of information between organizations (Hartley et al., 2013; Torfing, 2019).

Our study demonstrates that in addition to the specific content of the managerial reforms, the overall reform orientations also matter for PSI. All of our hypotheses concerning the impacts of reform orientations on PSI (H4, H5, H6) were confirmed. We found evidence that reforms that are driven by administrators rather than politicians are more conducive to PSI. This can result from the fact that civil servants can take a longer-term view of managerial reforms and have informational advantages concerning which reforms are needed to improve the functioning of the administration (e.g., Borins, 2001b; Korac et al., 2017; Torfing & Ansell, 2017). We also find that reforms that are crisis-driven and oriented toward cost-cutting do not facilitate improvements in PSI. In the PSI literature, there has been a long-standing debate about the effects of crises and cost-cutting efforts on PSI (Van der Voet, 2019), with some scholars arguing that crises and cost-cutting facilitate PSI (e.g., Borins, 2001b; Demircioglu & Audretsch, 2017) and other suggesting the opposite (e.g., De Vries et al., 2016; Khanal, 2022; Laegreid et al., 2011). Thus, our study offers additional evidence for the latter set of arguments.

Our study also makes a convincing case for why it is important to look at the different managerial reforms implemented in a country in order to understand improvements in PSI. Indeed, if we only look at the country means in Table 2, no obvious patterns emerge. For example, based on the existing literature, we would expect countries from the Germanic tradition (Austria and Germany) to show more modest improvements in PSI than those from the Anglo-Saxon tradition (the UK and Ireland) because they focus more on ensuring legal compliance and bureaucratic controls, whereas the Anglo-Saxon tradition has a more managerial orientation (Mohr et al., 2021; Painter & Peters, 2010). Our data shows, however, that the country means for improvement in innovation are similar for all four. Also, we would expect countries from the Napoleonic administrative tradition to be slower in improving PSI given their high level of state-centrism, politicization, and legalistic accountability, (e.g., Mohr et al., 2021; Painter & Peters, 2010) but Table 2 shows a relatively low score for France and Spain, while Italy and Portugal have relatively high scores. We would also expect countries from the Scandinavian administrative tradition to follow similar dynamics in PSI and score higher than the other countries due to their decentralization and consensual style of decision-making (Painter & Peters, 2010). Table 2, however, points to diverging scores: Denmark is among the high-scorers, while Sweden among the low-scorers, with Finland and Norway in between. In Table 2, high-scorers include countries that went through dramatic crisis experiences and severe austerity in 2008–2011 (e.g., Portugal and Ireland), while low-scorers include countries with lower levels of austerity and only moderate degrees of crisis (e.g., Sweden) (see Mohr et al., 2021 for an overview). These discrepancies point to the need to look closer at which types of managerial reforms have been undertaken in different countries and what the overall reform orientations have been since those may play a role in influencing improvements in PSI. Our findings also reinforce the argument put forth by Cinar

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et al. (2022) who emphasize the importance of examining more systematically how the political, administrative, and economic contextual features in different countries influence PSI.

6 | CONCLUSION

In their systematic review of the PSI literature, Lopes and Farias (2022) emphasized that in order to better understand public sector innovation, it is important to investigate how different management strategies influence the innovation processes. In our study, we followed this suggestion. In the title of our paper, we posed the following question: what kinds of managerial reforms foster public sector innovation?

Our study demonstrates that managerial reforms focusing on collaboration and results-orientation do indeed facilitate PSI, while marketization-type reforms have no significant impact. These findings echo the results of several other empirical studies, which found positive impacts of reforms focusing on collaboration and results orientation on PSI (Cinar et al., 2019; De Vries et al., 2016;Hijal-Moghrabi et al., 2020; Laegreid et al., 2011; Verhoest et al., 2007). Although several empirical studies have indicated that marketization-type reforms facilitate PSI (Hijal-Moghrabi et al., 2020; Laegreid et al., 2011; Verhoest et al., 2007), our study shows that the marketization-oriented NPM reforms have not had a significant impact on PSI. Thus, our paper contributes to the existing PSI literature by demonstrating how the theoretical claim stating that NPG-type reforms exert more positive influence on PSI than NPM-type reforms (as postulated in Hartley et al., 2013) holds in a cross-country setting. Given the number of countries and the size of the sample, our study offers the most comprehensive proof of that theoretical claim to date.

While several existing studies have examined the impact of different types of managerial reforms on PSI, our novel contribution to the literature is to zoom in on the impacts of general reform strategies and orientations on PSI. So far, no other cross-country large-N study has undertaken such an analysis. Our empirical study indicates that reforms initiated by public administration (rather than politicians) are more conducive to PSI. We also show that reforms that are crisis-driven and oriented to cost cutting have negative impacts on PSI. Thus, our findings suggest that while the impacts of general reform orientations have not been systematically examined in empirical studies so far, it is an important part of the picture for understanding how different public sector reform dynamics influence PSI.

Our study has several shortcomings which can be addressed in future research. First, the main caveat of our study is that the operationalization of innovation does not allow us to capture different types of public sector innovation (e.g., service vs. process, incremental vs. radical) or different phases of the innovation cycle (e.g., idea generation, development, implementation, dissemination, diffusion). Cinar et al. (2022) show how the national context can influence prevalent types of PSI, and Cinar et al. (2023) demonstrate that collaborative arrangements can have different impacts across the various stages of the innovation cycle. Hence, in future studies, it would be fruitful to examine in more detail how different public sector reforms and crises influence different *types* of innovations and various *phases* of PSI. Our study offers a useful analytical and empirical starting point for such studies by showing that managerial reforms matter for PSI; hence, future studies can tease out the more nuanced impacts on specific types of innovation and across different stages of the innovation cycle.

Second, our dataset dates back to 2014. Thus, while it captures the impacts of the managerial reforms carried out in late 2000s and early 2010s, it does not examine the most recent waves of reforms in European countries. During the past decade, European countries have adopted several reforms (e.g., pertaining to digitalization, co-creation of services, creation of policy labs, applying design thinking to service design) (see, e.g., Tõnurist et al., 2017) which are likely to have had significant effects on PSI as well. Future studies are hence needed to get a more up-to-date picture of the connections between managerial reforms and PSI.

Third, in our study the implicit assumption has been that PSI is a positive phenomenon. As a number of scholars have pointed out, however, innovation may not necessarily constitute an improvement (Hartley, 2005; Torfing, 2019). Indeed, PSI has also a dark side and may entail risks and unforeseen negative consequences (Meijer & Thaens, 2021).

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Also, it is important to keep in mind that none of our findings suggests that certain types of managerial reforms *guarantee* innovation in the public sector. Rather, our findings point to the associations between managerial reforms and PSI, at least as perceived by high-level executives. Furthermore, the concrete impacts of different reforms and instruments on innovation are likely to depend on their details. In our paper, we have painted a "broad brush" picture of the different managerial instruments and their impacts on PSI. In practice, there may be considerable variations in how different countries and organizations employ performance management and collaborative governance. Also, as Cinar et al. (2023) show, the influence of different management practices (like collaborative governance arrangements) can vary depending on the phase of the innovation process. Future studies could take a closer look at how different instruments of performance management or collaborative governance influence PSI across innovation stages.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

PEER REVIEW

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DATA AVAILABILITY STATEMENT

Data are openly available at https://search.gesis.org/research_data/ZA6598.

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ENDNOTES

[1] All of the reform instruments outlined in Section 2.1. can be influenced by the general reform strategies discussed in Section 2.2.

[2] Data can be accessed at: https://search.gesis.org/research_data/ZA6599

[3] The robustness models show two slight differences from the OLS. In the model with cluster standard errors, the administration driven reforms had a lower level of statistical significance ($p < 0.05$) and in the ordered logit model fiscal stress also had a lower level of statistical significance ($p < 0.01$).

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