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## **How is Public Service Motivation Affected by Regulatory Policy Changes?**

Policies changing the conditions for frontline public service providers are frequent. However, we know little about *whether* and *in what ways* such policies feed back to the attitudes and motivation of the personnel. This article examines how a specific regulatory policy change involving a restriction on work conditions affected Danish general medical practitioners' (GPs) public service motivation (PSM). Using a three-wave survey panel in which the regulatory policy change occurred between the first two rounds of data collection, we find both short-term and long-term effects on the GPs' PSM. Specifically, the GPs experienced a lasting decline in this type of motivation following the regulation. However, this was only with respect to their level of attraction to policymaking, public interest, and self-sacrifice, whereas their level of compassion increased in the short term. Results indicate that regulatory policies constraining the work conditions of frontline public service providers can indeed produce lasting negative motivational effects.

**Keywords:** Policy change, public service motivation, health care, panel data

# How is Public Service Motivation Affected by Regulatory Policy Changes?

## INTRODUCTION

Policies that change the conditions for frontline public service providers are frequent and often become a source of tension and conflict between them and policymakers – not least when those policies are of a regulatory nature and involve austerity measures, such as expenditure cuts and layoffs (Kiefer et al. 2015). In these cases, we might expect policies to hamper public service providers' work attitudes, such as motivation, job satisfaction, and commitment. Recently, there has been a call for more research into the effects of policies in public administration because “policy is a political force with important consequences for commonly studied administrative phenomena – from administrative capacity, structures, routines, and authority relations to public service motivations and organizational cultures” (Moynihan and Soss 2014, 324–25). However, we know little about *whether* and *in what ways* such effects are in fact at play.

Lowi (1972) distinguishes between four policy types (distributive, redistributive, regulatory, and constituent) in an attempt to explain and understand some of the dynamic political consequences of different types of policies. The central distinctions in this typology concern the extent to which government coercion is remote or immediate and whether it works (indirectly) through the environment or (directly) on individual behavior as this has consequences for the nature of expected political repercussions. In this article, we study the dynamic effects of a specific regulatory policy change implying immediate and individually directed government coercion on public service providers' motivation for delivering public services. Hence, we consider the policy feedback effects in terms of internal consequences for the public administration of services and the

motivation of those who deliver it rather than—as is usually the case in the policy feedback literature—study the consequences for citizens, interest groups, or elites.

Public service motivation (PSM), defined as the motivation to help others and contribute to society through delivery of public services, is an important predictor of behavioral outcomes and performance in public service organizations (Bellé 2013; Andersen, Heinesen, and Pedersen 2014). Conceptualized by Perry and Wise (1990) and Perry (1996), this motivational attribute specifies how public service providers are motivated by commitment to the public interest, compassion, self-sacrifice, and attraction to policymaking (dimensions of PSM) in their tireless attempt to ensure high quality public services for the benefit of users. Hence, public service providers' PSM is an important factor to consider when examining the consequences of changed public policies.

Despite an increasing amount of PSM research, important questions about the concept's dynamic properties remain unanswered (Bozeman and Su 2014). This is amplified by the fact that most PSM research continues to rely on cross-sectional research designs and focuses on PSM as the independent variable. Longitudinal research designs are more apt for studying the temporal developments in individuals' PSM; yet such designs are still in short supply (Bozeman and Su 2014, 7). This gap limits our knowledge about which factors cultivate or hamper PSM over time and hinders researchers' attempts to make sound recommendations to managers about ways to maintain and foster these public service oriented motives in the workforce. Recent studies show that PSM can change in face of major life events (e.g., Brænder and Andersen 2013; Georgellis and Tabvuma 2010; Kjeldsen and Jacobsen 2013; Ward 2014), indicating that PSM in fact (or at least to some extent) is a dynamic attribute. In this article, we extend this line of research by investigating the ways in which general medical practitioners' (GPs') PSM developed in face of a change in a policy regulating their work conditions.

We expect declining levels of PSM among GPs in response to policy changes when such changes are of regulatory nature and create negative constraints on the GPs work conditions. This expectation flows from an argument that regulatory policy changes can introduce or exacerbate a misfit between the personal motive of individual public service providers to “do good” for others and society and the opportunities the professional and regulated work environment offer to do so (Kjeldsen 2014). This is particularly the case when changes in existing policies are characterized by a dispute between frontline providers of public services and policymakers. As noted by several scholars, however, PSM dimensions are likely to have different antecedents and consequences (e.g., Kim and Vandenberg 2010), and we therefore explore the potential heterogeneous effects of the specific policy change on subcomponents of GPs’ PSM. A few studies have examined the relationships between PSM and the support for organizational change. Contrary to our general expectation, these studies find that having high PSM employees can be a resource for organizations undergoing reorganization and reductions in the workforce (Jakobsen, Kjeldsen, and Pallesen 2017; Moynihan and Pandey 2007; Wright, Christensen, and Isett 2013). However, these studies are limited to study PSM at a single point in time. Therefore, it is critical to investigate *whether* and *in what ways* PSM develops in response to policy changes that create constraints on public service providers’ work conditions.

Empirically, the article responds to a call for more research into questions of how policies affect the motivation of frontline personnel by investigating in what ways the GPs’ PSM developed in the aftermath of a regulatory policy change adopted by the Danish Parliament in the summer of 2013. The specific policy change included a strong and immediate coercive element of suspending the collectively negotiated work agreements for the GPs. This was perceived by many GPs as a top-down initiated regulatory policy creating constraints of their work conditions and a somewhat unfair solution to a labor dispute between the GPs (and their professional organization) and the

policymakers in the early summer of 2013. We draw on a three-wave balanced panel of 105 GPs. The dataset is unique in the sense that it includes identical measures of the GPs' PSM and that the policy change was (unanticipatedly) introduced in between the first two rounds of data collection (April and September 2013 respectively). Hence, we are able to estimate the within-subject (GP) variation in PSM over time in response to the policy change while controlling for all observable and unobservable time-invariant confounders (Rabe-Hesketh and Skrondal 2008; Wooldridge 2010). Furthermore, the dataset includes survey responses collected almost two years after the policy change, enabling us to assess the longer-term effects on PSM as well.

The article proceeds as follows: First, we develop the theoretical framework for examining PSM in the context of policy changes drawing on the literature on policy change, PSM, and public service providers' motives and behavior in general. Second, we outline the data and methods followed by the results from the panel regressions. Finally, we discuss the scholarly as well as the practical implications of our results, including suggestions for further research.

## THEORETICAL PERSPECTIVES ON POLICY CHANGE AND PSM

The literature on change consistently points to employee support as a prerequisite for successful implementation of new initiatives (e.g., Fernandez and Rainey 2006; Ford, Ford, and D'Amelio 2008; Issett et al. 2013; Kelman 2005). However, scholars of policy feedback in public administration have argued that frontline providers not only shape policy outcomes (e.g., through supportive behaviors in the implementation stage) but that the policies also shape—or feed back to—the resources and motivation of the providers themselves (Moynihan and Soss 2014). Prime examples of this include various public management policies and personnel policies introduced as part of the “New Public Management” wave that swept across the public sectors in the Western

world in the 1990s and 2000s and introduced (amongst others) new means for incentivizing and monitoring public service personnel (Barzelay 2001; Hood 1991). Studies on pay-for-performance initiatives in the public sector have shown, for example, how management policies can crowd out work motivation (Stazyk 2012; Weibel, Rost, and Osterloh 2009) and alter the performance of public sector personnel (Andersen and Pallesen 2008; Bellé 2013; Moynihan 2010). In the following, we outline the literature on policy change and PSM in terms of how policy changes in the organizational environment can be expected to feed back to and alter the attitudes of public service providers.

### Policy Change and PSM

Lowi (1972) provides a typology of different public policies as one of the most durable analytical frameworks for understanding dynamics of policies and their consequences. This framework rests on two assumptions: 1) policy causes politics, and 2) the central characteristic of government is coercive power. Distinguishing between different modi for applying coercion (through individuals or the environment) and remote vs. immediate likelihood of coercion, Lowi used the framework to classify different government policies as regulatory, distributive, redistributive, or constituent, leading to expectations of different patterns of political participation (e.g., elitist vs. pluralist participation). While being widely used for specific analyses of policy content, processes, and changes (Smith 2002), Schneider and Ingram (1990) has, however, argued that Lowi's framework has a weak spot in taking policy-relevant behavior of the target populations for granted. Whether target populations actually comply with the policy, take advantage of its opportunities, or change behavior and attitudes in some other way is an overlooked topic of theorization and investigation. In our case of policy feedback, the target group is the administration itself—or more specifically, the individual public service providers and how regulatory policies aimed at changing (and in our case constraining) their work conditions shape their motivational responses.

An interesting and important question to consider when studying policies and their effects on public service providers' attitudes and motivation is whether changes in existing policies have the potential to foster (or risk undermining) the employees' PSM (Moynihan and Soss 2014). PSM concerns individuals' "orientation to delivering services to people with the purpose to do good for others and society" (Perry and Hondelghem 2008, vii). Multiple studies have demonstrated PSM's positive effects on employee attributes, such as turnover intention (e.g., Gould-Williams, Mostafa, and Bottomley 2015; Brewer 2008) and real-world behavior (Bellé 2013; Andersen, Heinesen, and Pedersen 2014; Jensen and Vestergaard 2017). Hence, whether and how policy changes may affect frontline providers' PSM is important to consider when decision makers strive to actualize policy outcomes as they are intended.

A growing number of studies sheds light on the potential ways in which the PSM of public service providers and its positive effects on, for example, job satisfaction and commitment depend on an experienced fit between individual values, the organizational context, and the greater policy context of the welfare regime (e.g., Bright 2007; Kim 2012; Kjeldsen and Andersen 2013; Steijn 2008). The flipside of this argument is that an experienced misfit can trigger negative perceptions of one's work environment. While these studies point to the importance of the organizational environment for contextualizing the effects of PSM, they offer little insight into the changeability of PSM itself and whether this motivational force can be shaped by the political environment surrounding the administration. Approaching these questions, a couple of recent studies have directly linked PSM with political reforms and organizational changes (Jakobsen, Kjeldsen, and Pallesen 2017; Moynihan and Pandey 2007; Wright, Christensen, and Isett 2013; van der Voet, Steijn, and Kuipers 2017).

In their study on public state-level managers, Moynihan and Pandey (2007) show that the implementation of policies targeted at improving the context for public service delivery (e.g.,

quality improvement programs and removal of red tape) is positively associated with PSM. Examining the associations between support for political reforms and public service providers' PSM, Jakobsen and colleagues (2017) study hospital mergers and austerity reforms vs. the implementation of a long-term service-oriented policy. They find that although public service motivated employees may be very critical toward the former, they do not seem to be “runaway agents” when considering the long-term strategy and goals of a public sector hospital; in fact, they seem to be very supportive. These results suggest that PSM can be associated with politically initiated changes in the sense that PSM can act as a mobilizing force for supporting certain policies. Yet, *whether* specific policies feed back to and shape public service providers' PSM during and after the implementation of policy changes is still largely unexplored (Moynihan and Soss 2014, 329). This is not least due to the fact that the majority of existing studies, including the aforementioned, are based on cross-sectional research designs. In such cases, PSM is observed at a single point in time, rendering it difficult to assess the temporal dynamics of PSM and whether policies hold the power to alter the individuals' level of PSM.

Recent studies have begun to address the former challenge and employ longitudinal research designs. These studies show that individuals' level of PSM indeed does seem to change in face of major life events, such as entering the labor market (Kjeldsen and Jacobsen 2013), switching sector (Georgellis and Tabvuma 2010), being deployed to a war zone (Brænder and Andersen 2013), or participating in a public service training program (Ward 2014). Ward (2014), for example, shows that participation in the AmeriCorps national service program had positive effects on the participants' level of commitment to public interest and civic awareness. Yet, the second challenge—*in what ways* policies can be sources of changing levels of PSM among frontline workers—remains unexplored. We contribute to these two research paths. First, we add to a growing number of studies on the temporal dynamics of PSM. Second, we make an original contribution to

research on policy feedback in public administration by exploring *whether and in what ways* a specific regulatory policy change constraining frontline public service providers' work conditions is related to changes in their PSM.

Changes to existing policies including regulations that create more restrictive conditions for the work of public service providers often give rise to tension and conflict between the political management on the one side and frontline workers and their unions on the other side compared with for example distributive or constituent policies where coercion is more remote (Lowi, 1972). Such situations may be further aggravated by the fact that many public service providers are professionals, meaning that they are members of an occupational group with a high degree of specialized, theoretical knowledge and firm intra-occupational norms. They typically perform tasks that entail high levels of discretion in service delivery and prescribe actions of doing good rather than paying attention to effectiveness and economic gain (Andersen 2009; Freidson 2001). The motivation to advance the public interest may be put to the test when frontline workers are confronted with policy changes that likely lead to service cutbacks, such as authority reforms, or policies that constrain their opportunities to provide service to end users (e.g., due to increased requirements for documentation of one's work). It has thus been suggested that PSM not only represents a resource for increasing public service and performance but that it might also become a source of frustration when public service providers do not experience opportunities to fulfill their prosocial motives for helping other people and society at large (Andersen and Kjeldsen 2013). Our main expectation flows from this line of reasoning, arguing that regulatory policy changes can introduce or exacerbate a misfit between the personal motive of individual public service providers to "do good" and the opportunities the professional and regulated work environment offer to do so (Kjeldsen 2014). This can in turn lead to lower levels of motivation over time as public service

providers become increasingly frustrated with or demoralized by the experienced misfit between their personal and professional motives and the opportunities to act on these in their work settings.

In line with this reasoning, a recent study by van der Voet and colleagues (2017) argues, and empirically demonstrates, that the notion of prosocial motivation as a resource when establishing commitment to an organizational change depends on how the policy “‘fits’ with the norms, values or motivations of the change recipients” (van der Voet, Steijn, and Kuipers 2017, 447); in this specific context the client perception of a child welfare reform in the Netherlands. The importance of the employees’ perception of government interventions is also echoed in the theories on *motivation crowding* (Frey 1997). According to this perspective, the impact of government interventions on the employees’ autonomous work motivation is contingent on their perception of the intervention as either *supportive* or *controlling* of their work. Government interventions that are perceived as controlling risk crowding out autonomous types of motivation, such as PSM and intrinsic motivation (e.g., Jacobsen, Hvitved, and Andersen 2014), and vice versa for supportive perceptions (e.g., Pedersen et al. 2018). Translated to our research context, policy changes that are perceived by the frontline workers as creating negative constraints to their work environment can hamper the public service providers’ opportunities to actualize and act on their public service motives and in turn create higher levels of frustration and burnout, which can lead to declining levels of PSM.

In sum, this leads to our main expectation that the PSM of frontline public service providers will be negatively affected by a regulatory policy change, which constrains their work conditions and presumably provides them with less or worse opportunities for serving the interests of the users. In other words, we expect a case of what has been labeled “negative policy feedback”; i.e., when a policy has negative consequences for the motivation and resources of the personnel or in more general terms; when a policy undermines rather than reinforces its base for sustainability

(Moynihan and Soss 2014; Weaver 2010). This is even more so when—as in our case—we deal with a service area that is already highly regulated and/or where service providers are historically somewhat skeptical toward new policy initiatives. Our first hypothesis to be empirically tested is thus:

*H1: Public service providers' PSM is negatively affected by a regulatory policy change constraining their work conditions.*

However, looking at PSM and support for a fiscal austerity reform with negative implications for local government employees in a city in the southeastern part of the United States, Wright, Christensen, and Isett (2013) find that some city employees actually support policies entailing extensive restructuring and reductions in the workforce. This indicates that the dynamics of PSM following a policy change may prove to be more complex than just a question of more or less PSM. As mentioned in the introduction, PSM can be expressed in four different operational dimensions (Perry 1996). First, resting on a normative wish to contribute to society due to feelings of duty and moral obligation, PSM can be expressed as a general commitment to the public interest. Second, based on affective commitment and empathy with underprivileged groups in society, PSM can also be expressed as compassion. Third, Perry (1996) describes how PSM can be expressed as an attraction to policymaking if the motivation to do good is associated with a wish to act through the political system. Finally, PSM may also be expressed as self-sacrifice; i.e., a general willingness to set aside personal needs in order to help others and do what is best for society. Bearing in mind the results by Wright, Christensen, and Isett (2013) and drawing on this conceptualization of PSM, our study also explores whether the different dimensions of PSM respond differently to the policy change; i.e., we test for heterogeneous effects across the four dimensions of PSM.

More specifically, the study by Wright, Christensen, and Isett (2013) shows that the employees with high self-sacrifice were the ones to express support for the austerity reform. Although their study does not include a temporal aspect, this may be an indicator that an individual's general will to sacrifice selfish concerns for others is perhaps strengthened when they are faced with policies that threaten their conditions for delivering high quality welfare services (cf. also the previously mentioned study by van der Voet, Steijn, and Kuipers 2017). On the other hand, public service providers' attraction to policymaking may be the PSM dimension most likely to be negatively affected when a policy change is regulatory, top-down initiated, and implemented by politicians in spite of conflicting demands from the public service providers. The same is likely to be the case regarding the commitment to the public interest dimension. Public service personnel are committed to advance the public interest due to their professional occupational membership, their public employment, and their public service job tasks but when confronted with policies leading to service cutbacks, this may result in a motivational drop.

Finally, based on affective and emotional identification with underprivileged groups of service beneficiaries, we expect the motivation to do good to be largely unaffected by policies directed at the work conditions of the providers. As previously noted, highly professionalized occupational groups have strong norms that prescribe appropriate behavior toward the users (Andersen 2009; Friedson 2001). Since the prescription for appropriate behavior and the motivational force resting on affective identification are clearly directed at the users and not the political environment, we do not expect regulatory policies that target the work conditions to feed back directly to the public service providers' level of compassion PSM.

In sum, this leads to the following expectations:

*H2: Public service providers' self-sacrifice is positively affected by a regulatory policy constraining their work conditions.*

*H3: Public service providers' attraction to public policy and commitment to public interest are negatively affected by a regulatory policy change constraining their work conditions.*

*H4: Public service providers' compassion is unaffected by a regulatory policy change constraining their work conditions.*

Policy feedback mechanisms may thus prove positive or negative depending on the PSM dimension in question.

## RESEARCH DESIGN

To examine whether policies can feed back to and alter the PSM of individual providers of public services, we focus on a change in the policy environment of Danish GPs in 2013. We draw on repeated survey measures from the same GPs before and after the policy change to assess changes in their level of PSM. This section introduces the empirical research context and the regulatory policy change, data, key measures, and main estimation strategy.

### Research Context: General Medical Practitioners

In Denmark, GPs work as self-employed specialists in general medicine (Vedsted et al. 2005). A collective agreement between the regional political authorities (*Regionernes Lønnings- og Takstnævn* – RLTN) and the GPs' professional association (*Praktiserende Lægers Organisation* – PLO) regulates the terms and conditions for service provision □ e.g., remuneration fees, accessibility conditions, etc. (PLO and RLTN 2014). While the GPs resemble small business

owners, their services are public in the sense that they are ordered and paid for by the government. This is important because PSM has been linked more strongly to service delivery than to institutional affiliation (e.g., Andersen, Pallesen, and Pedersen 2011). Existing studies corroborate this assertion, documenting the prevalence and importance of a public service orientation and the motivation among the GPs. In their 2007 study, Wood et al. find that British GPs with restrictive practices for antibiotics prescription justify their behavior on the grounds of a social responsibility. In a different study, Jensen and Vestergaard (2017) show that Danish GPs respond to changes in their level of PSM by altering the number of home visits. This is important because such services are more time consuming and less profitable compared to regular in-clinic consultations. While Danish GPs—similar to GPs in other countries—certainly face profit motives, there is little reason to expect that financial concerns are the only important type of work motivation among the GPs. Indeed, the social responsibility is an inherent part of entering the medical profession with GPs swearing to professional oaths.

Furthermore, the GPs' level of expressed PSM does not deviate much from those reported by other significant groups of public service providers, such as school teachers, nurses, and administrators (Andersen and Pedersen 2012). While GPs—like other groups of public service providers—face mixed motives in their work, PSM's prevalence and implications for GP behavior (Jensen and Vestergaard 2017) suggest that it is of general importance to develop a better understanding of how changes in regulatory policies can feed back to and shape the GPs' PSM.

#### Regulatory Policy Change: Law 904 as Case

Governance interventions can take multiple forms, such as policies with distributive, redistributive, regulatory, and constituent content (Lowi 1972). In this article, we focus on regulatory efforts in the context of Law 904 (of 4 July 2013) that effectively ended an open conflict between regional and national political authorities on the one side and the association of general medical practitioners on

the other side. Regulatory policies are put in place by legitimate decision makers (here the Danish national parliament) to prescribe or mandate certain obligations and actions as necessary components in public service provision. On the area of general practice, regional political authorities and the GPs historically negotiated multi-year collective agreements to govern the terms and conditions of service provision (RLTN and PLO 2014).

In 2013, multiple unsuccessful attempts were made to reach a new agreement before negotiations were abandoned altogether in early May 2013. At the heart of the failed negotiations was a desire by the regional political authorities to assert more power and influence over the conditions under which GPs carry out their work. This resulted in Law 904 (passed by the Danish Parliament), which increased the authority to mandate information about the GP's practice and for regional authorities to use this information "for planning, ensuring quality, controlling the remunerated subsidies and fees" (Law 904 of 4 July 2013, §195.2). In this respect, the policy changed the regulations and corresponding work conditions surrounding the GPs' work. Similar to other studies investigating regulatory efforts by governments (see for example Andersen, Boye, and Laursen 2018), it is difficult to separate the open tension and conflict between political authorities and the GPs from the specific policy change. However, the tension is also what underscores the salience to the GPs and thus offers justification for our expectation that the policy change could indeed feed back to their motivation.

GPs constitute a highly professionalized group of public service providers, and this offers a particular advantage in our case. Specific policies and policy changes may be perceived differently by individual public service providers, but members of highly professionalized occupations are generally thought to share theoretical and normative foundations based on extensive education, training, and occupational norms (Freidson 2001). Highly professionalized public service providers can therefore be expected to share a more homogenous set of values and perceptions, and this

increases the internal validity of our study because the GPs' perception of the policy change can be assumed to be fairly homogenous. To assess the validity of our claim, we have collected perceptual measures of the policy change among the GPs in the second round of data collection (i.e., shortly after its implementation). We asked the GPs how they thought the change of the existing policy would affect their professional discretion and to what extent they perceived the policy change to be imposed from the political level. The results are very clear as evidenced in Figure 1. 85% of the GPs reported that their professional discretion was being limited by the policy change, while more than 97% felt that the policy change was imposed on them. This validates our classification of the policy change as a change that creates constraints on the GPs work conditions.

[Figure 1 here]

Policy changes and shocks to the policy environment of public service providers are frequent, but our case is unique because we have obtained measures on the same set of the GPs' PSM shortly before and after the policy intervention. Researchers can seldom predict the timing of policy changes, and we are therefore often constrained to use retrospective data. In this case, we are able to examine the development of individual public service providers' PSM resulting from a specific policy change. Moreover, work motivation can be endogenous to policy changes. For example, public service providers may self-select in or out of public service jobs depending on the content of a specific policy or the policy environment more generally; i.e, if working conditions are critically hampered, individuals with lower levels of PSM may be more likely to switch to a different job. This highlights why a longitudinal research design offers an appropriate alternative to cross-sectional research designs when examining how policies feed back to motivation.

Data

To examine whether the policy change supported or undermined the PSM of the individual GPs, we use repeated measures of the same GPs' PSM. Specifically, we distributed an identical set of PSM items electronically to the GPs in April 2013 (before the policy change), September 2013 (after the policy change), and May 2015 (nearly two years after the policy change). In the first survey, all GPs with a sole-owner clinic were contacted (1,151), and 407 completed the questionnaire, which corresponds to a response rate of 35%. In the second survey, 213 GPs, or 52% of the original panel, completed the questionnaire. In the final survey, 116 GPs completed the questionnaire, corresponding to a 54% response rate. After removing suspicious entries and retaining only respondents with complete answers on motivational items in all surveys, the article relies on a three-wave balanced panel of 105 GPs.<sup>1</sup> Attrition is impossible to avoid in longitudinal research, but we gathered information on GP gender, age, and tenure for the population of sole-owner GPs to assess how representative our final sample is of this larger group. For the population of sole-owner GPs, the mean age in 2013 was 55.85 years compared to 56.61 in our sample. Mean tenure was 17.80 years of experience compared to 20.92 in our sample. Finally, 67.80% were men compared to 73.30% in our sample. Male experienced GPs thus seem to be slightly overrepresented in our final sample, which is fairly representative considering it constitutes less than 10 percent of the population.

This longitudinal dataset is unique for several reasons. First, the policy change targeted at the GPs in Denmark was introduced in between the first two rounds of data collection. This enables us to examine how the GPs' PSM developed in the aftermath of the policy change. Second, the third round of data allows us to address the important question of the durability of any short-term changes in PSM dimensions. Does an increase or a decrease in the level of PSM in response to the policy change converge toward its starting point, or do changes sustain in the long run? We know very little about these issues. The third, and more methodological, strength of our longitudinal

design relates to its ability to control for all observable and unobservable time-invariant confounders. Because we have a balanced panel (i.e., complete observations on all GPs across survey rounds), we only use the within-subject (GP) variation to examine how PSM dimensions changed in the aftermath of the policy change. In this sense, a “GP fixed effects approach” has one clear advantage: It effectively controls for potential confounders that do not vary over time (Allison 2009) related to the individual GP (e.g., gender) and the characteristics of higher level entities (e.g., the clinic and the municipality in which it is located). This is particularly evident in the analysis of the short-term changes in PSM as the time period between the first two surveys only spans six months.

#### Measurement and Validation: PSM

PSM is a multidimensional construct consisting of the four first-order factors: “commitment to the public interest (CPI),” “compassion (COM),” “attraction to policymaking (ATP),” and “self-sacrifice (SS)” (Perry 1996). The four dimensions have been validated across a number of different job and country contexts but often in forms deviating from Perry’s original 24-item scale (1996). The reasons for this may vary from practical concerns (e.g., length of questionnaire) to more substantive differences across job contexts or cultures (Kim and Kim 2016). In this study, we take advantage of our longitudinal design to obtain a model specification that is invariant across time. A factor model that fits our data and displays configural, metric, and scalar invariance would greatly increase our confidence that observed changes in PSM dimensions are in fact due to the changes in the level of the dimensions and not a result of different latent factor structures for the different survey rounds. To test this, we have performed confirmatory factor analyses using the *sem* command in STATA 14. As noted by Antonakis and House (2014, 753), group mean differences in the factors (i.e., PSM dimensions) as a function of exogenous variables may cause heterogeneity and be detrimental to the fit of the model if omitted. We therefore control for survey rounds (before

policy change = reference), gender, and age in our models. This produces a strong test of the measurement model because it implies that the factor structure and loadings are invariant across all three survey rounds for GPs of different gender and age.

Our initial 15-item abridged version of Perry's (1996) scale (see Table A-1 in appendix) did not fit our data well as demonstrated by the chi-square test of exact fit:  $\chi^2(134) = 434.36, p < 0.001$  and the approximate fit indices: CFI = 0.66, TLI = 0.58, RMSEA = 0.09, and SRMR = 0.45. Modification indices indicated that the problems were mainly due to high loadings across dimensions for multiple items. Based on a number of iterations, we estimated a trimmed model with four first-order factors with two items (marked with asterisk in Table A-1), each loading highly on their respective factor and displaying discriminant properties according to the modification indices. Mean standardized factor loadings for the resulting model are high ( $\lambda_{CPI} = 0.76, \lambda_{COM} = 0.72, \lambda_{ATP} = 0.79, \lambda_{SS} = 0.77$ ), and it replicates the covariance matrix in our data as indicated by the insignificant chi-square test of exact fit:  $\chi^2(30) = 39.24, p > 0.05$ . Approximate fit indices also support the model: CFI = 0.96, TLI = 0.92, RMSEA = 0.03, and SRMR = 0.05. To examine construct reliability, we report Jöreskog's rho because this measure is based on the latent measurement model in which measurement errors of individual items are modeled and not sensitive to the number of items, like Cronbach's alpha (Fornell and Larcker 1981). Reliability estimates are satisfying for all dimensions with 0.73 for CPI, 0.71 for COM, 0.78 for ATP, and 0.75 for SS. Based on this measurement model, we have generated additive scales for all four PSM dimensions from the predicted factor scores and rescaled each variable to range from 0 to 100 to ease interpretation and comparability of regression coefficient estimates. Descriptive statistics can be found in Table A-2 in the appendix.

#### Estimation and Robustness Checks

The main analyses are based on a series of panel regressions with a fixed effects estimator to capture all time-invariant factors related to the individual GP and higher-level entities (e.g., the clinic, patient composition, and socioeconomic characteristics of the geographical area where the clinic is located). To account for the strong serial correlations of the individuals' responses in a panel, standard errors are clustered by GP using the bootstrap function with 1,000 resamplings (Angrist and Pischke 2009; Cameron and Trivedi 2010). Individual dimensions of PSM have been shown to correlate quite highly (Wright 2008), and we may therefore suspect that the error terms in our regression equations are correlated for a given GP but uncorrelated across the GPs. One way to model this dependency is to estimate a system of equations with the seemingly unrelated regression (SUR) technique (Cameron and Trivedi 2010, 162–167). A Breusch-Pagan Lagrange multiplier test for error interdependence indicates joint statistically significant correlations between the error terms in our set of regression equations:  $\chi^2(6) = 176.82, p < 0.001$ . We check the robustness of our findings with fixed effects SUR models with all four PSM dimensions included as dependent variables and standard errors of each equation clustered by GP. The results show very modest efficiency gains with standard errors deviating in most cases between three and six percent and no substantive differences from the results of the fixed effects panel models. We therefore only report estimates from the fixed effects panel regressions in the next section, but results of the seemingly unrelated regressions can be found in Table A-4 in the appendix.

## FINDINGS

Table 1 presents five fixed effects panel models with PSM and each of the PSM dimensions as the dependent variables. The models estimate the within-GP change in PSM dimensions from before to after the policy change in July 2013. Regression coefficients can thus be interpreted as the scale

point change in PSM and each PSM dimension after the policy change (in the short and long term respectively), holding all observable and unobservable time-invariant factors constant.

[Table 1 about here]

In line with H1, we observe that the GPs' overall PSM decreases in the aftermath of the policy change, but the estimate is not statistically significant short term ( $\beta = -2.08, p > 0.1$ ). However, as suspected, when we look at the dimensions of PSM, we do indeed observe heterogeneous effects. First, attraction to policymaking decreases rather substantively in the aftermath of the policy change. Specifically, the average decrease in the level of attraction to policymaking for individual GPs is 14.17 scale points and statistically significant,  $p < 0.001$  (model 1.2). These results are consistent with H3 and suggest that specific policies can—at least in the short term—feed back to and negatively affect public service providers' motivation to do good through the political system. However, we do not find evidence of any short-term effects on individual GPs' motivation to engage in public service provision based on a normative sense of duty to society (CPI) or motivation to sacrifice selfish concerns for service to others (SS), weakening the support for H3 and offering little support for H2. In contrast to H4, we find that the GPs' level of motivation to do good based on affection and emotional identification indeed seems to increase in the aftermath of the policy change. Specifically, the GPs' level of compassion increases on average 7.82 scale points ( $p < 0.01$ ), indicating that the specific policy can—at least in the short term—also work to foster aspects of public service providers' PSM. Together, these results suggest that the same policy may not only hamper but also foster the public service-oriented motives of individual public service providers.

Before we discuss these findings in more detail, a lingering question concerns the durability of these findings. Do the increase in the level of compassion and the decrease in the level of

attraction to policymaking in response to the policy change converge toward their starting points, or do the changes sustain in the longer run? Returning to Table 1, “long-term effects” estimate the within-GP variation of “change” in PSM dimensions from April 2013 to May 2015; i.e., a span of almost 20 months. To evaluate how the long-term effects deviate from the short-term effects, Table A-3 (see appendix) estimates the within variation in the GPs’ PSM for an indicator variable with “September 2013” (i.e., adjacent to the policy change) as the reference point. Table A-3 thus supplements the results of Table 1 with a test of how PSM adapts following an increase, decrease, or no change as a consequence of the policy change.

First, we find the long-term effect on PSM negative and even more pronounced and statistically significant ( $\beta = -5.69, p < 0.001$ ). Attraction to policymaking is also negative and statistically significant ( $\beta = -9.44, p < 0.001$ ) albeit that the magnitude of change is less pronounced in the long term (the difference between the short-term and long-term effects is not statistically significant, see Table A-3). Furthermore, we now observe a negative long-term effect on GPs’ level of commitment to the public interest ( $\beta = -7.87, p < 0.001$ ). This indicates that specific policies can also feed back to and negatively affect public service providers’ motivation to engage in public service delivery based on a normative sense of duty to society but that such effects do not necessarily manifest in the short term. Likewise, we find that the GPs’ average level of self-sacrifice decreases in the long term. Specifically, the GPs’ public service motivation to set aside personal concerns for service to others and society diminishes by more than six scale points from April 2013 to May 2015, and this indicates that self-sacrifice may very well constitute a resource for mobilizing support for unpopular policies (Wright, Christensen, and Isett 2013), but the very same policies may eventually crowd out this motivation over time. Finally, we do not find any statistically significant changes to the GPs’ level of compassion in the longer run ( $\beta = 2.33, p > 0.1$ ). Interestingly, the motivation to do good based on affective identification seems to converge

toward its initial level (i.e., before the policy change), and the difference in regression coefficient estimates is statistically significant at the 0.01 level (see Table A-3 in appendix).

## DISCUSSION AND CONCLUSION

Studying a specific policy change in the Danish health care sector, this article demonstrates that regulatory policy changes and changes in the policy environment of public service delivery can feed back to the administration and the motivation of individual public service providers. We further nuance this assertion and explore how regulatory policy changes can have heterogeneous effects on the individual dimensions of PSM. Using a balanced panel of 105 GPs, three dimensions (attraction to policymaking, commitment to the public interest, and self-sacrifice) were found to decrease in the aftermath of a policy change, whereas the GPs' level of compassion increased in the short term but converged back toward its starting point in the longer term. In the following, we outline the theoretical implications of our results and discuss the main contributions and weaknesses of our study. Finally, we highlight the practical implications and point to ways for scholars to further develop this line of research.

Regarding attraction to policymaking, commitment to the public interest, and self-sacrifice, PSM is negatively affected by the specific regulatory policy change studied here. Our main expectation is thus largely supported. However, the effects on commitment to the public interest and self-sacrifice are only manifested in the long term, and we observe a short-term increase in the GPs' level of compassion. Our findings suggest that self-sacrifice may very well constitute a mobilizing force in establishing support for reforms with negative implications for the workforce (Wright, Christensen, and Isett 2013), but this does not imply that the individuals' motivation to sacrifice personal concerns for service to others maintains or even reinforces in the light of regulatory policy changes. Individuals with high levels of self-sacrifice may be able to see the necessities of

sacrificing egoistic motives such as job security, beneficial compensation packages and workload to accommodate shrinking budgets or other changes in existing working conditions. However, as policies with negative implications for the public service providers are in fact implemented and have become the new reality, individuals may be less willing to set their own needs aside for the sake of others and society. This may be what causes the lower levels of self-sacrifice. Related to this, PSM may also come with a cost since it has been empirically linked with burnout, stress, and absenteeism as a consequence of going to work when feeling ill (Jensen, Andersen, and Holten 2017; Schott and Ritz 2017). This highlights some of the darker sides of having high PSM, which may be attenuated by the identified policy feedback mechanisms. Contrary to the other dimensions, compassion is found to increase in the short term, suggesting that the interplay between regulatory policies and the motivation of public service providers is complex: The same policy change can exert both negative and positive feedback mechanisms, or in other words, not only hamper but also foster motivation to engage in public service behavior.

### Contributions

This observation leads to the first main contribution. The politics of administration can feed back to the motivation of public service providers as recently argued by Moynihan and Soss (2014), but we argue (and show) that such effects are likely to be heterogeneous across the dimensions of PSM. This echoes the recommendations by PSM scholars to include all dimensions in empirical studies because individual dimensions are likely to have different antecedents and consequences (Perry 1996; Kim and Vandenabeele 2010). Our study is the first to our knowledge to demonstrate how a specific regulatory policy change can alter the different dimensions of PSM of individual public service providers. One explanation for the heterogeneous effects may be that the individuals redirect their motivation to do good for others and society from one form to another when faced by exogenous shocks such as a policy change. In our case, the GPs possibly become more

compassionate in the short term because the policy change creates a change in the opposite direction of one of the other dimensions, attraction to policy making, and thus creates a kind of substitution effect (i.e., “Because of the policy, I cannot do good for others and society through political means, so I redirect my motivation toward caring for the patients”). To further examine this argument, we included *user orientation*—a motivation to do good for specific users through public service provision (see for example Andersen, Pallesen, and Pedersen 2011; Jensen and Andersen 2015)—as an additional dependent variable. If our argument has any validity, we should expect user orientation to show a positive—and even more pronounced—increase in this motivation after the policy change, and that is exactly what we see in the data.<sup>2</sup> This supports our interpretation that the increase in compassion could be due to a substitution of motivational forms taking place.

A second contribution of the article relates to the durability of our initial findings. By including a third data point almost two years after the policy change, we evaluate the durability of the short-term feedback effects. In this respect, we (1) respond to calls for taking time more seriously in public administration research (Stritch 2017), (2) add to existing studies on the dynamics of PSM that have not been able to address the durability of observed changes in PSM (e.g., Brænder and Andersen 2013), and (3) build on the developing literature on policy feedback in public administration. Importantly, our study indicates that negative feedback mechanisms may not necessarily manifest adjacent to the policy change under study but may require more time to internalize and become evident among the public service providers. This underscores the importance of minding the time (Stritch 2017) and highlights the need for researchers to collect repeated measures over extended time periods.

A third and final contribution is more methodological in nature. Longitudinal research designs are still a rare feature in PSM research, but they offer great potential for advancing our understanding of the dynamics of this motivation (Bozeman and Su 2014). Analyzing a three-wave

balanced panel of 105 GPs, we investigate how the motivation of individual public service providers develops over time. Specifically, we take advantage of our balanced panel to estimate the within-GP variation in PSM dimensions applying a “fixed effects” approach to control for all observable and unobservable time-invariant confounders. Hereby, we add to the cumulative number of studies demonstrating the changeable character of PSM (e.g., Brænder and Andersen 2013; Kjeldsen and Jacobsen 2013; Ward 2014). As demonstrated, individual GPs change in their level of PSM to a fairly large extent both in the short and the long term, indicating that PSM may indeed be characterized as a state rather than a trait (Wright and Grant 2010). This opens up for a number of interesting implications for researchers and practitioners. Before we discuss these, however, we need to address the limitations of the study.

### Limitations

Endogeneity constitutes a potential concern for this study. The research design is conducted as a before-after study with a policy change in between the first two survey waves. Even though this design holds great promise in terms of tracking the development of the individuals’ PSM over time, it does not include a control group of GPs not affected by the policy change. This is required to identify the causal impact of the policy change on PSM.

Unobserved factors that vary over the studied time period and correlate with individual PSM, such as time or age trends, may confound our estimates. As noted by Moynihan and Pandey, workers in the provision of health care may become increasingly discouraged over time if they keep experiencing inadequate health services (2007, 48). This suggests that PSM might change with the GPs’ tenure. Another explanation for changes in PSM is that individuals’ altruistic motivation develops according to a life-cycle and that PSM is likely to increase with age as a consequence of a greater outlook on future generations (Pandey and Stazyk 2008, 103; McAdams and St. Aubin

1992; Vogel and Kroll 2016). Age and tenure correlate 0.91, and therefore we included each variable alongside our long-term indicator variable in separate models to test for potential age and tenure effects.<sup>3</sup> We do not find evidence that long-term results can be accounted for by an age or a time pattern. Table A-5 in the appendix presents the results of a series of fixed effects seemingly unrelated regression analyses including tenure. It is important, however, to note that other potential time trends resulting from concurrent (unobserved) events in these two years cannot be dismissed completely, and the reader should therefore be careful to interpret the long-term impact of the policy change on PSM in this light.

Furthermore, disentangling the discourse and conflict from the specific policy (Law 409 of 4 July 2013) is difficult at best. If the GPs were aware of a foreseeable breakdown of negotiations prior to the first measurement point, this effectively reduces the variation that we would be able to identify between the first and second measurement point. In other words, our test yields conservative estimates of the PSM change in response to policy change in so far that the GPs had already internalized the policy discourse to some extent. We cannot therefore exclude that we are underestimating the magnitude of change in the GPs' PSM following the policy change.

Another challenge relates to the generalizability of our findings. First, the small  $N$  (105 individuals) makes it questionable whether we would have found different results for another group of GPs, such as GPs with shared ownership. Panel attrition is also relevant here as the GPs remaining in our panel initially displayed systematically lower levels of PSM. This does not affect the validity of our estimates, but we cannot be sure that GPs with higher initial levels of PSM would respond similarly to the policy change. A related question is whether GPs as private providers of public service differ systematically from other groups of public service providers. Even though such comparisons are still very sparse, we cannot rule out that private providers differ systematically from groups directly embedded in the public sector with respect to attraction to policymaking. That

said, average PSM levels reported by other studies of significant groups of public service providers, such as teachers (Andersen and Pedersen 2012), do not differ much from the average PSM levels observed in this study. Finally, examining policy feedback mechanisms is a two-edged sword. On the one side, a detailed case can be made for the feedback from a specific policy to the motivation of individual public service providers, but on the other side, specific policies are inevitably rooted in their context, and therefore we do not know how well our findings travel to other cases.

### Implications

The limitations of our study help identify avenues for scholars to advance this line of research. We have demonstrated that a specific policy change in the Danish medical sector exerts both negative and positive feedback mechanism with respect to PSM. Nevertheless, it will be relevant for researchers (1) to further explore the heterogeneous effects of both regulatory and other types of policies on PSM dimensions, (2) to further disentangle the effects of policies on motivation from the conflict surrounding the policies (e.g., researchers might compare policies with varying levels of conflict during their implementation with a more positive, service-oriented content—see, e.g., Kiefer et al. 2015), and (3) to expand the empirical evidence on policy feedback mechanisms to motivation in other contexts (e.g., different occupations, sectors, and countries). In this endeavor, our study suggests that researchers need to be attentive to short- and long-term effects of specific policies. Certain feedback mechanisms may not manifest in higher or lower levels of motivation right away but need time to internalize among individual public service providers.

Our findings have direct implications for politicians and managers. Policies that worsen the work conditions can hamper the motivation to engage in public service behavior with the objective of doing good for others and society. Even though our findings indicate that PSM is indeed “manageable” in this respect, it also places great responsibility on politicians and managers to avoid

crowding out such prosocial public service-oriented motives. This is particularly important because recent studies demonstrate PSMs' significance for real-world behavior. For example, Jensen and Andersen (2015) recently linked the PSM of individual GPs in Denmark with their prescription of antibiotics; Bellé (2013) found higher productivity among nurses with high PSM; and Andersen, Heinesen, and Pedersen (2014) demonstrated better academic achievement among students of high-PSM teachers. The motivation crowding theory argues that external interventions may crowd in or crowd out autonomous types of work motivation depending on the individuals' perception of the specific intervention as supportive or controlling of their work (Frey 1997; Jacobsen, Hvitved, and Andersen 2014; Pedersen et al. 2018). In line with this perspective, our results show that several dimensions of the GPs' PSM declined in response to a specific regulatory policy change that was perceived by an overwhelming majority of the GPs' as creating negative constraints on their work and being imposed by political authorities. In this way, our study suggests that policies may indirectly (and adversely) affect the behavior of public service providers by feeding back to their motivation to do good. These effects not only manifest in the short term but also in the long term (almost two years after the policy adoption), and practitioners therefore need to be attentive to how policies may affect the individuals' motivation and behavior.

## NOTES

<sup>1</sup> The panel attrition analyses do not reveal any statistically significant difference in terms of gender and age between the GPs remaining in the second and third panel rounds. There are, however, a tendency for the GPs with higher initial levels of compassion to drop out of the panel from the first to the second round and, subsequently, from the second to the third round. These results are somewhat surprising since higher levels of PSM have been theoretically (Houston 2006) and empirically linked to survey participation (Jacobsen and Kjeldsen 2014). GPs with initial levels of attraction to policymaking are more likely to stay in the panel from the first to the second round, but not from the second to the third round. We do not see these initial differences as overtly problematic because we only use within-GP variation to examine changes in individual GPs' level of PSM over time. Thus, the differences may limit the generalizability of our findings, but they do not render our regression estimates invalid.

<sup>2</sup> Similar to Andersen, Pallesen, and Pedersen (2011), user orientation was measured with the three items: i) "the individual patient is more important than formal rules", ii) "it gives me energy to know that I helped the patient", and iii) "if the patient is satisfied, the job is done". The estimated regression coefficients for user orientation are 6.72 ( $p < 0.01$ ) in the short term and 4.90 ( $p < 0.1$ ) in the long term, suggesting that the motivation to do good for patients increased in the aftermath of the policy change.

<sup>3</sup> Age and tenure are time-invariant in the analyses of the short-term effect of the policy change on PSM because the two first surveys were collected the same year.

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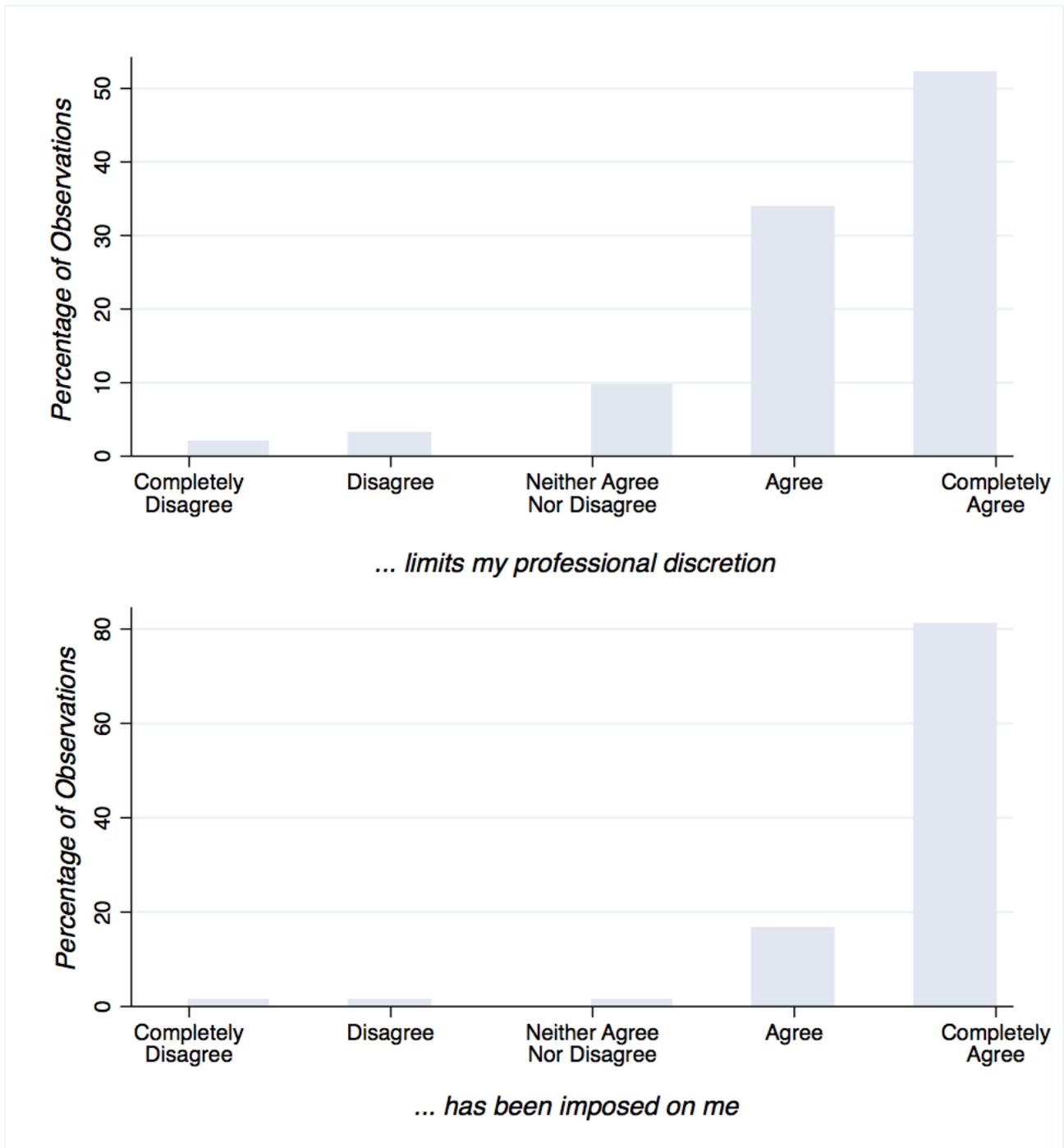
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**Figure 1.** Distribution of GPs’ perception of policy change. *Note:*  $N = 105$  GPs recorded a non-missing answer to the first item “... limits my professional discretion.” 104 GPs recorded a non-missing answer to the second item “... has been imposed on me.” Responses were collected in the second survey round (September 2013). Statements were given in response to the GPs’ perception of the specific policy change.

**TABLE 1**

Fixed Effects Panel Regressions of Public Service Motivation. Unstandardized Regression Coefficients (SE) for Balanced Panel

	<i>Model 1.1</i>	<i>Model 1.2</i>	<i>Model 1.3</i>	<i>Model 1.4</i>	<i>Model 1.5</i>
	<i>Public Service Motivation</i>	<i>Attraction to Policymaking</i>	<i>Self-sacrifice</i>	<i>Commitment to the Public Interest</i>	<i>Compassion</i>
Ref.: Before Policy Change (Spring 2013)					
After Policy Change (Fall 2013)	-2.08 (1.50)	-14.17 *** (2.34)	-1.09 (1.62)	-0.258 (2.06)	7.82 ** (2.63)
Long-term Effect (Spring 2015)	-5.69 *** (1.55)	-9.44 *** (2.26)	-6.06 ** (1.76)	-7.87 *** (2.23)	2.33 (2.73)
Constant	62.02 *** (1.34)	56.50 *** (1.77)	60.92 *** (1.41)	70.41 *** (1.64)	70.77 *** (2.15)
<i>N</i> (GPs)	315	315	315	315	315
R <sup>2</sup> (Within)	0.089	0.213	0.089	0.102	0.060
Sigma_e	9.28	13.94	10.45	13.37	15.92
Sigma_u	15.01	19.87	16.19	15.76	16.89
Rho	0.723	0.670	0.706	0.581	0.530

Note: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , †  $p < 0.1$ .  $N = 105$ ,  $T = 3$ . Standard errors are bootstrapped with 1,000 resamplings to account for clustering on GPs.

## APPENDIX

### TABLE A-1

#### Items Measuring Public Service Motivation

##### Commitment to the Public Interest (CPI):

- I unselfishly contribute to my community (PSM 23)
- Meaningful public service is very important to me (PSM 30)
- I would prefer seeing public officials do what is best for the whole community; even if it harms my interests (PSM 34)\*
- I consider public service my civic duty (PSM 39)\*

##### Compassion (COM):

- It is difficult for me to contain my feelings when I see people in distress (PSM 4)\*
- For me, considering the welfare of others is one of the most important values (PSM 8)
- I am often reminded by daily events about how dependent we are on one another (PSM 13)\*

##### Attraction to Policymaking (ATP):

- The give and take of public policy does not appeal to me (*R*) (PSM 27)
- I do not care much for politicians (*R*) (PSM 31)\*
- I generally associate politics with something positive (Andersen, Pallesen, & Pedersen, 2011)\*

##### Self-sacrifice (SS):

- Making a difference in society means more to me than personal achievements (PSM 1)\*
- I put civic duty before self (PSM 5)\*
- I feel people should give back to society more than they get from it (PSM 17)
- People like me are willing to risk personal loss to help society (PSM 19)
- I am prepared to make sacrifices for the good of society (PSM 26)

*Note:* The items were distributed in Danish and may be provided upon request to the corresponding author. PSM + no. refers to Perry (1996). Survey questions were accompanied by the pretext: "Please state whether you agree or disagree with the following statements...." *R* marks a reversed question. \* The items that ended up being included in the final measurement model.

**TABLE A-2**  
Descriptive Statistics for Central Variables

<i>Variable</i>	<i>Description</i>	<i>Time</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Public Service Motivation (PSM)	Composite measure based on four indices: CPI, COM, APPM, and SS. Theoretical range 0–100	0	105	62.02	17.12	0	100
		1		59.95	16.03	5.32	96.75
		2		56.34	17.26	3.02	92.55
Commitment to the Public Interest (CPI)	Index based on two items (Table A-1). Theoretical range 0–100	0	105	70.41	18.65	0.223	100
		1		70.15	18.72	0	97.90
		2		62.53	20.10	4.71	96.16
Compassion (COM)	Index based on two items (Table A-1). Theoretical range 0–100	0	105	70.77	24.77	0	99.12
		1		78.59	18.22	4.34	100
		2		73.10	20.43	3.11	99.91
Attraction to Policymaking (ATP)	Index based on two items (Table A-1). Theoretical range 0–100	0	105	56.50	20.23	1.63	100
		1		42.34	25.24	0	97.82
		2		47.07	22.95	0.880	98.59
Self-sacrifice (SS)	Index based on two items (Table A-1). Theoretical range 0–100.	0	105	60.92	18.76	8.37	100
		1		59.83	17.15	13.03	98.42
		2		54.86	18.94	0	95.50
Age	Age in years	0	105	56.61	7.32	36	69
		1		56.61	7.32	36	69
		2		58.64	7.26	39	71
Tenure	Number of years as general medical practitioner	0	105	20.92	8.07	1	36
		1		20.92	8.07	1	36
		2		22.31	8.17	3	38
Gender	1 = Male	0/1/2	105	0.733	0.444	0	1

*Note:* Time denotes rounds in panel. Period 0 = Surveyed in April 2013; 1 = Surveyed in September 2013; 2 = Surveyed in May 2015.

**TABLE A-3**

Fixed Effects Panel Regressions of Public Service Motivation. Unstandardized Regression Coefficients (SE) for Balanced Panel

	<i>Model A-3.1</i>	<i>Model A-3.2</i>	<i>Model A-3.3</i>	<i>Model A-3.4</i>	<i>Model A-3.5</i>
	<i>Public Service Motivation</i>	<i>Attraction to Policymaking</i>	<i>Self-sacrifice</i>	<i>Commitment to the Public Interest</i>	<i>Compassion</i>
Ref.: After Policy Change (Fall 2013)					
Long-term Effect (Spring 2015)	-3.61 * (1.66)	4.73 † (2.42)	-4.97 ** (1.89)	-7.61 ** (2.57)	-5.50 † (3.04)
Constant	59.95 *** (1.38)	42.34 *** (2.11)	59.83 *** (1.49)	70.15 *** (1.84)	78.59 *** (1.90)
<i>N</i> (GPs)	210	210	210	210	210
R <sup>2</sup> (Within)	0.070	0.062	0.101	0.134	0.056
Sigma_e	9.38	13.06	10.53	13.75	16.01
Sigma_u	15.28	22.28	16.46	16.82	15.70
Rho	0.726	0.744	0.710	0.599	0.490

Note: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , †  $p < 0.1$ .  $N = 105$ ,  $T = 3$ . Standard errors are bootstrapped with 1,000 re-samplings to account for clustering on GPs.

**TABLE A-4**  
Fixed Effects Seemingly Unrelated Regressions of Public Service Motivation.  
Unstandardized Regression Coefficients (SE) for Balanced Panel

	<i>Model A-4.1</i>	<i>Model A-4.2</i>	<i>Model A-4.3</i>	<i>Model A-4.4</i>
	<i>Attraction to policymaking</i>	<i>Self-sacrifice</i>	<i>Commitment to the public interest</i>	<i>Compassion</i>
Ref.: Before Policy Change (Spring 2013)				
After Policy Change (Fall 2013)	-14.17 *** (2.45)	-1.09 (1.69)	-0.258 (2.25)	7.82 ** (2.69)
Long-term Effect (Spring 2015)	-9.44 *** (2.39)	-6.06 ** (1.86)	-7.87 ** (2.27)	2.33 (2.72)
Constant	71.60 *** (5.78)	66.05 *** (4.25)	75.95 *** (4.76)	83.69 *** (4.96)
<i>N</i> (GPs)	315	315	315	315
R <sup>2</sup>	0.758	0.781	0.679	0.630
$\chi^2(104)$	988.62	1,125.20	666.86	536.90

Note: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ .  $N = 105$ ,  $T = 3$ . Standard errors are jackknife standard errors to account for clustering on GPs.

**TABLE A-5**  
Fixed Effects Seemingly Unrelated Regressions of Public Service Motivation.  
Unstandardized Regression Coefficients (SE) for Balanced Panel

	<i>Model A-5.1</i>	<i>Model A-5.2</i>	<i>Model A-5.3</i>	<i>Model A-5.4</i>
	<i>Attraction to Policymaking</i>	<i>Self-sacrifice</i>	<i>Commitment to the Public Interest</i>	<i>Compassion</i>
Ref.: Before Policy Change (Spring 2013)				
After Policy Change (Fall 2013)	-14.17 *** (2.44)	-1.09 (1.70)	-0.258 (2.25)	7.82 ** (2.69)
Long-term Effect (Spring 2015)	-7.95 ** (2.65)	-5.99 ** (1.94)	-7.43 ** (2.46)	3.10 (2.95)
Tenure	-1.07 (0.654)	-0.053 (0.543)	-0.320 (0.626)	-0.554 (0.649)
Constant	100.99 *** (17.20)	67.51 *** (14.18)	84.76 *** (16.24)	98.94 *** (17.86)
<i>N</i> (GPs)	315	315	315	315
R <sup>2</sup>	0.763	0.781	0.680	0.632
$\chi^2(104)$	1012.42	1125.32	668.62	540.15

Note: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ .  $N = 105$ ,  $T = 3$ . Standard errors are jackknife standard errors to account for clustering on GPs.