

Does public service motivation affect the behavior of professionals?

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Abstract

The public service motivation (PSM) literature claims that PSM may be the key to increasing performance in the provision of public service. The implicit assumption in the literature is that PSM affects individual behavior, which then affects performance; however, little is known about the effect of PSM on behavior. To close this gap, we need to look at the separate PSM dimensions (public interest, compassion and attraction to policy making), because their effect on behavior is mediated by different variables. This paper therefore investigates how the PSM dimensions affect the behavior of Danish physiotherapists (n=556). The analysis is based on valid register data on individual behavior combined with a web-based survey of PSM. We find that the dimension 'public interest' positively affects the proportion of disabled patients. Services to this patient type are less lucrative, but the disabled patients are seen as more needy, increasing the perceived contribution to the public interest. The positive association implies that a high level of PSM, especially the public interest dimension, is beneficial for public services in terms of securing the interests of weak and needy groups of citizens.

Introduction

One of the core questions in Public Administration is how to improve the performance for public services (Hondeghem and Perry, 2009). During the New Public Management era, research focused particularly on incentives, but such systems have their limits (Perry, Engbers and Jun, 2009). This directs attention towards alternative means of improving public services, and employee motivation seems a fruitful starting point for such efforts. Motivation can be seen as the forces that energize, direct and sustain behavior, and public service motivation (PSM) is ‘a individual’s orientation to delivering service to people with the purpose of doing good for others and society’ (Hondeghem and Perry, 2009: 6). Existing research indicates that the level of PSM may positively affect performance, but the evidence about PSM/performance relationships is limited (Brewer, 2008).

The existing literature has two main problems: Insufficient empirical and theoretical focus on behavior as a mediator between PSM and performance and poor performance data. The implicit theory behind the expected positive effect of PSM on performance is that PSM affects individual behavior, which then affects individual performance, but very few empirical studies have investigated the link between PSM and behavior. Furthermore, the theoretical link between PSM and behavior is unclear. This paper argues that PSM ‘fuels’ the types of behavior which (in the individual’s perception) does good for others and society. This theoretical argument can be tested by investigating behavior which the relevant individuals see as beneficial to others and society. The expectation is that public service motivation, and in particular the public interest dimension, positively affects this perceived pro-social behavior. Seen from this perspective, PSM will increase performance if (and only if) this type of behavior positively affects performance as defined by the decision-makers.

The definition of performance stands in the center of the other main problem in the existing literature. As Boyne (2003) points out, it is difficult to define what high performance is for public services, and providers and politicians do not necessarily agree. Even when a consensual performance measure exists, testing the effect of PSM on performance is difficult because employee performance is affected by an array of factors other than PSM, e.g. pay structure, education level, professionalism, private or public ownership, other motivational variables and institutional context (Rainey and Steinbauer, 1999; Perry, Mesch and Paarlberg, 2006; Flynn, 2007). Due to low efficacy, individual employee performance can seldom be inferred from measures of outcome such as the health of patients or grades of pupils (Miller & Whitford, 2007). The difficulties in measuring and modeling individual performance explain why the existing literature has predominantly

investigated self-reported performance. This has, however, numerous shortcomings, and one of the main contributions of this paper is that the analyses are based on objective register based measures of individual employee behavior. We investigate whether Danish physiotherapists with high scores on the PSM dimensions show more of the behavior which this occupation sees as most beneficial to society (namely physiotherapy to disabled patients).

Investigating Danish physiotherapists, we have prioritized internal validity and measurement validity over generalizability. We have thus avoiding variation in many of the factors which we know affect behavior and performance (e.g. macro-institutional context, type of employees, ownership, occupation and task). The investigated physiotherapists are self-employed, which is unproblematic as recent research has shown that PSM is not a government monopoly and that individuals in the private, non-profit and voluntary sectors can have equally high PSM levels (Steen, 2008). Private providers of public goods are often remunerated per service, and this means that a considerable amount of reliable data exists regarding their service provision.

We utilize the existence of two parallel types of physiotherapy, i.e. services for the disabled and services for ordinary patients. The treatments performed are the same, and fees are identical for the two patient types, but the services for disabled patients are more time-consumingⁱ, because they need a little more help (for example to get dressed). Services for ordinary patients are therefore more financially lucrative. The physiotherapists do, however, see disabled patients as more needy, and physiotherapists with higher PSM are therefore expected to prioritize services to disabled patients, despite the fact that providing services to ordinary patients is easier and more lucrative. All investigated physiotherapists provide therapy to both types of patients, so it is a question of proportions. The investigation is based on register information about individual behavior combined with a survey of all Danish physiotherapists, from which we use the private physiotherapists whose individual behavior can be isolated (n=556).

The paper proceeds as follows. First, we discuss the literature on PSM and individual performance. Second, we briefly describe private Danish physiotherapy followed by the formulation of specific hypotheses. Third, we present the data and methods. Fourth, we present and discuss the results, and the paper concludes with a discussion of its contributions, limitations and implications.

Public service motivation and individual performance for professionals

This section first discusses why PSM should affect performance. Based on this discussion, we then argue that the causal link between PSM and performance can only be expected for a group of employees with similar perceptions of meaning of ‘doing good for others and society’. As professionals from the same profession constitute such a group, our next step is to discuss specifically how public service motivation affects the behavior of professionals. The section concludes by offering a theoretical proposition which is tested in the following sections.

Since its inception, public service motivation has been a much discussed concept, and no consensual definition exists so far. Rainey and Steinbauer define PSM as a ‘general, altruistic motivation to serve the interests of a community of people, a state, a nation or humankind’ (1999: 23), while Perry (1996) talks about ‘an individual’s predisposition to respond to motives grounded primarily or uniquely in public institutions.’ The trend does, however, go towards emphasizing the *service* in public service motivation. Accordingly, we follow Hondeghem and Perry (2009: 6) in defining PSM as ‘an individual’s orientation to delivering service to people with the purpose of doing good for others and society.’

Already in 1990, Perry and Wise (1990) hypothesized that public service motivation is positively related to performance. They argued that individuals will be motivated to perform well when finding their work meaningful. Accordingly, they expected that task identity and perceived task significance contributed to performance, and that individuals with high PSM derived these job characteristics from producing public service (ibid.: 371). Although the literature is very interested in this relationship, the evidence is, however, rather sparse. Based on a survey of 3,506 Flemish civil servants, Vandenabeele (2009) found that the public interest dimension affects individual performance, but this study has an important limitation, as the measurement of performance relies on self-reporting. Reliance on self-reporting is also a weakness in the Leisink and Steijn study (2009), which examined the relationship between PSM and three performance-related variables (affective commitment, willingness to exert effort and perceived job performance). Like Vandenabeele (2009), they found that the public interest dimension affects the investigated performance-related variables positively. Still, the existing evidence on PSM-performance relationships is inconsistent (Alonso and Lewis 2001: 376), and the measures of individual performance and/or public service motivation are problematic.

The reliance on self-reported performance is not only problematic, because self-reports are generally unreliable; it also leaves the definition of performance to the employees and thereby

compares many different performance measures. Perry and Wise (1990) implicitly assume that performance for public services is always what is good for others and society and that a consensual understanding exists of what one should do to do to obtain this. We agree that motivation can be seen as a force that energizes, directs and sustains behavior, and that individuals with high PSM will put a lot of energy in efforts to deliver service to people with the purpose of doing good for others and society. Individuals do not necessarily, however, see the same actions as beneficial to others and society, and PSM might also affect behavior in a way that is beneficial to some interests and not to others. In other words, PSM is expected to fuel behavior which the individual see as pro-social. Seen from this perspective, PSM will only increase performance if the relevant type of perceived pro-social behavior positively affects performance as defined by the decision-makers.

It is difficult to test whether PSM ‘fuels’ perceived pro-social behavior if the individuals have different conceptions of what this behavior is. It is, however, possible to find employees with very similar values and therefore almost identical perceptions of what actions benefit other and society most. Professions are, in our opinion, such groups. A profession is an occupation with a high level of professionalism, defined as the degree of co-existence of specialized, theoretical knowledge and professional norms, i.e. prescriptions for acceptable actions under given conditions applying to and sanctioned within a given occupation (Andersen, 2005: 25). Professional organizations typically have ethical codes emphasizing the promotion of the public interest (Pandey and Stazyk, 2008), and professionals are, in the course of their education, socialized to “an ideology that asserts greater commitment to doing good work than to economic gain” (Freidson, 2001: 127). Professionals within the same profession thus have very similar values, and we expect them to agree about what actions they should take to do good for others and society. This is the main reason why we investigate the relationship between public service motivation and behavior for professionals.

As Brewer (2008: 146) points out, public service motivation is a multidimensional concept, and some conceptions may be more strongly linked to individual and organizational performance, while other are weakly related, unrelated or even inversely related. It is therefore relevant to discuss what dimensions are relevant in this context, and how we specifically expect them to affect the investigated behavior. Perry (1996) originally argued that PSM has four distinct dimensions: attraction to public policy making, public interest, compassion and self-sacrifice. These dimensions represent different ways in which individuals can be oriented to deliver services to do good for other and society. The policy making dimension can be seen as attraction to do good by participating in political forums, while commitment to the public interest is about fulfilling an

obligation to the public general and do good for all persons in a given community. The compassion dimension concerns the background for doing good, and high levels of compassion entail love and concern for others and a desire that others are protected. Self-sacrifice implies willingness to substitute service to others for tangible personal rewards, but this dimension is weakly supported as a separate dimension (Perry, 1996 and Coursey and Pandey, 2007). Furthermore, a recent Dutch survey (Leisink and Steijn, 2009) also indicated that the same four dimensions are not necessarily as relevant in Europe as in the USA. Self-sacrifice is therefore not included in this investigation. We include the other three dimensions (attraction to policy making, public interest and compassion), because we generally find them relevant for the behavior of public service providers. This does not mean, however, that they are necessarily relevant for all providers or all types of behavior.

Having chosen to investigate professionals, we need to consider which PSM dimensions we expect will affect the behavior of professionals. As the ethical codes of professional organizations often emphasize the promotion of the public interest, we expect a rather strong association between behavior and the public interest dimension. The argument is that because the profession urges the individual professional to pursue the public interest, professionals will ‘use all their fuel’ from this dimension in their behavior. In contrast, professions are normally against letting emotions affect behavior. The argument is that professional conduct should be guided by knowledge and professional norms alone, and this implies that emotions (and therefore the dimension compassion) only affect the behavior of professionals weakly (or not at all). How much attraction to policy making can be expected to affect the behavior of professionals is not as clear-cut as for the other two dimensions. On one hand, the professions protect their autonomy, trying to minimize the influence of politicians and other non-professionals on their jurisdiction. On the other hand, this does not mean that the professionals cannot themselves participate in political processes, and they also have the resources to do so (e.g. education). Attraction to policy making is hardly relevant for all types of behavior, and we find it hard to see why attraction to policy making should directly affect professional procedures within a given institutional framework. Still, the dimension might very well be relevant for other types of behavior, especially if it involves more interaction with political decision-makers and gives the physiotherapist the opportunity to ‘do good’ via political participation. We include the dimension in the analysis, because the literature expects a positive association between performance and PSM as such. Still, our main theoretical proposition below relates only to the public interest dimension.

Theoretical proposition: *Professionals with higher levels of on the public interest dimension act more in the way, which they perceives contribute to do good for others/society.*

The next section will operationalize this expectation into specific hypotheses, but that demands a little more information about Danish physiotherapists.

PSM and behavior among Danish private physiotherapists

As mentioned, the most important reason to investigate physiotherapists is that we expect them to be a profession and thus have very similar values and almost identical perceptions of what actions benefit other and society most. It has therefore been important to ensure that this is the case. The classification of physiotherapists as a profession is based on a qualitative investigation of the physiotherapists' occupational level of theoretical, specialized knowledge and their professional norms (17 interviews, media coverage of the occupation and web based categorization of the physiotherapy education). Their theoretical, specialized knowledge primarily comes from their basic education. All Danish physiotherapists must have completed the same 3½-years program, which focuses on both theory and practice. As part of the qualitative investigation prior to the survey, we interviewed 17 physiotherapists, including the chairman of the Association of Danish Physiotherapists. These interviews indicated that professional norms exist within the physiotherapy occupation, although the norms are not as firm as for health occupations with very high levels of professionalism (e.g. dentists and physicians).

We investigate physiotherapists rather than the very highly professionalized groups, because it offers a uniquely well-suited measure of pro-social behavior. Private physiotherapists provide the same types of services (see appendix B for a list of physiotherapy services) to two different groups: disabled patients with progressive diseasesⁱⁱ (in the following: disabled patients) and ordinary patients. The fees are identical for ordinary and disabled patients for the same service type, but the interviews showed that providing services to disabled patients is more time-consuming than ordinary physiotherapy, and most of the physiotherapists in the survey agreed to a Likert format statement saying that standard consultations with disabled patients are typically more time-consuming than standard consults with ordinary patients.ⁱⁱⁱ The chairman of the physiotherapists, who represents 99% of all Danish physiotherapists, described it this way:

These 'not so self-supporting' patients demand more. More personnel, more resources, and typically more time, compared to the ordinary patients who are quickly in and out and can clothe themselves and so on. It is

a very different task, but [pause]. It is a question of swings and roundabouts (Johnny Kuhr, Chairman of the Association of Danish Physiotherapists, our translation).

This implies that ordinary physiotherapy is more financially lucrative than physiotherapy for disabled patients, but this does not necessarily mean that the physiotherapists grant low priority to the latter. The mentioned 17 qualitative interviews with public and private physiotherapists namely indicate that physiotherapy for disabled patients with progressive diseases is perceived to be more important for 'the public good' than other types of physiotherapy. Physiotherapists see disabled patients as more needy as illustrated by the quotation below, which is very illustrative for the attitudes of the interviewed physiotherapists.

We think that free-of-charge physiotherapy for disabled patients is a major advantage, because citizens with a handicap can receive ongoing treatment, and this can give them some quality of life (Johnny Kuhr, Chairman of the Association of Danish Physiotherapists, our translation).

The question is now whether the level of PSM affects how physiotherapists prioritize between these two patient groups. Before we go into detail with the specific expectations, a short description of physiotherapy in Denmark will show that the physiotherapists can in fact to some degree affect their service profile, and that other incentives (such as fees and demand conditions) do not confound the analysis.

The Danish health care sector is financed by local and state taxes combined with user charges for some services (including ordinary physiotherapy). General practitioners (GPs) act as gatekeepers with regard to specialist treatment such as physiotherapy (Strandberg-Larsen et al. 2007). Subsidy to patients who have not been hospitalized thus demands a prescription from a GP. Rehabilitation patients from hospitals usually receive services from public organizations, whereas private clinics provide physiotherapy prescribed by general practitioners. This paper only concerns the latter. Both individual and collective physiotherapist clinics exist, and we only investigate physiotherapists with individual supplier permits to make sure that motivation can be linked to individual behavior, unconstrained by managerial directives.

Service types, fees, user payment, and many other factors are regulated by agreements between the physiotherapy association and the regions (*Regionernes lønnings- og takstnævn* and *Danske Fysioterapeuter*, 2008a + b). Importantly, the fees are exactly the same for all physiotherapists, and the fees for the same service are the same for services to ordinary and disabled patients (although the later are a little more time-consuming). As documented in table B in Appendix B, there are six types of services: First time consultation, standard consultation, short consultation, add-on for especially time consuming effort and different kinds of team training. In

this paper, we use three measures of the relative service provision to disabled patients: First, we calculate the percentage of all services (across all types of services) provided to disabled patients. Second, we calculate the percentage of standard consultations given to this category of patients. These two measures allow us to account for possible differences in the use of the different types of services (using the first operationalization) and to hold the service type constant (using the second operationalization). The third measure, the proportion of patients who are disabled, explores the causal chain further. Do the physiotherapists with high PSM give relatively more services to disabled patients because they give each disabled patient more services or have their PSM instead affected their patient profile in direction of more disabled patients? As implied by the theoretical proposition, we expect all three behavioral measures to be positively correlated with the PSM dimension public interest, because the physiotherapists clearly see physiotherapy to disabled as a public responsibility and a strong contribution to the public good. Hypotheses 1-3 express this expectation.

Hypothesis 1: The proportion of all services given to disabled patients is higher for physiotherapists with higher levels on the public interest dimension.

Hypothesis 2: The proportion of standard consultations given to disabled patients is higher for physiotherapists with higher levels on the public interest dimension.

Hypothesis 3: The proportion of disabled patients among all patients attending the physiotherapist is higher for physiotherapists with higher levels on the public interest dimension.

One could argue that the level of compassion should also be expected to affect the priority given to physiotherapy to disabled patient, but the professional logic does, as mentioned in the previous section, speak against this. Professionals normally praise themselves for acting based on professional norms and considerations for patient and society (and not based on emotions). Providing services to disabled is not related to politics, and we do not expect attraction to policy making (which can be interpreted as energizing ‘doing good’ by affecting the societal institution through the political game) to affect the priority. For these reasons, we only expect the public interest dimension to affect the priority of physiotherapy to disabled patients, while we do not have any explicit expectation concerning compassion and attraction to policy making.

Before we proceed with the analysis, it is worth discussing the market structure for physiotherapy services. The patients can freely choose among private physiotherapists, and the physiotherapists are only allowed to reject patients for objective reasons such as overcrowding. Still, the physiotherapists can use waiting time to deselect unwanted patients, and they can advertise for (and pamper) preferred patients. The regions determine the supply of private physiotherapists allowed to produce with public subsidy. This demands a supplier permit (Danish: *ydernummer*). Supplier permits can be granted to groups of physiotherapists and individual physiotherapists. In this paper, we only analyze self-employed physiotherapists with an individual supplier permit, as this enables us to link individual levels of PSM to individual behavior. Furthermore, it eliminates the possibility of managerial interference into the decisions made by the individual physiotherapists.

The level of public reimbursement (and therefore the user payment) depends on the patient type. Services to disabled patients are 100% publicly financed, whereas ordinary patients (e.g. with tension headaches) receive a 39.3% public subsidy and pay the remainder themselves (or receive some measure of reimbursement from private health insurance). Importantly, although the subsidy varies, the actual total fees received by the physiotherapists are exactly the same for the same services.

In addition to the agreements between the physiotherapy association and the regions, the physiotherapists are regulated by legislation (e.g. law announcements no. 95 by 7 February 2008 and no. 1350 by 17 December 2008) and guidelines (e.g. Danish National Board of Health, 2004). Especially the fixed fees and regulation of the number of physiotherapists allowed to provide publicly subsidized services mean that the level of competition is rather low, and that the demand situation does not differ much between different locations. However, we still control for the degree of urbanization to account for eventual differences in demand between physiotherapists working in rural and urban areas. The next section will go into further detail with the data, which enables us to perform these tests.

Data and methods

One of the principal reasons for investigating the link between PSM and behavior in Denmark is the existence of high quality, individual-level behavior data. This register data is the core of the data for this paper, and this section describes the register and how the register data is supplemented by a survey among physiotherapists. The register data comes from the Danish Health Provider Register and the Danish Health Insurance Register. The latter is based on the accounts from the regions'

payments to the physiotherapists and has accordingly been very rigidly controlled by the region and physiotherapists alike. For the individual supplier permits, the data is individual behavioral data, reflecting which services the individual physiotherapist delivered in the investigated period (January 1-June 30, 2008). For each type of service (e.g. standard consultation or training session), the register contains information about the number of services provided to ordinary and disabled patients, respectively. As mentioned, we use three measures of the relative service provision to disabled patients (the percentage of all services provided to disabled patients; the percentage of standard consultations given to this category of patients and the proportion of patients who are disabled). The descriptive statistics for these three operationalizations of the dependent variable are shown in the top rows of Table 1 which lists all the variables used in the analyses.

Table 1 here.

As already mentioned, the register data is supplemented by a survey of all physiotherapists with valid email addresses. The response rate among ordinary physiotherapists was 65%. We conducted a pilot survey with 100 respondents to test the questionnaire. If necessary, two electronic reminders were sent to the respondents. Additionally, the respondents could request a hard-copy version of the questionnaire. The survey was conducted in February-March 2009. In the survey, PSM is measured in three indices based on Coursey and Pandey's questions (2007), because their results indicate good support for this shortened scale (including compassion, attraction to policy making and public interest) compared to Perry's (1996) original work. Principal component analyses (Appendix A) show that there is only one component with an eigenvalue of more than 1 for each dimension, and that loadings for the relevant items on this first component for each dimension is higher than 0.4 (most are higher than 0.5). This confirms that the answers to the questions on PSM of the Danish physiotherapists can be structured in the three dimensions suggested by the theory.

In addition to these three indices, which can be seen in Table 1, we include four groups of control variables: (1) personal characteristics of the physiotherapist, (2) type of supplier permit, (3) characteristics of the patient, and (4) characteristics of the municipality where the clinic is situated. The most relevant personal characteristics are age and gender, as other studies find that females have higher levels of public interest (Perry, 1997) and compassion (Pandey & Stazyk, 2008:102), and that age and PSM are correlated (*ibid.*). We also included whether the respondents have been employed in the public sector, due to the potential difference in socialization, given that

the literature expects PSM to differ between sectors (Steen, 2008; Andersen, Pallesen & Pedersen, 2009).

Three variables characterize the supplier permit: 'No clinic', 'Part time' and 'Renter'. The main part of permits is for physiotherapists with clinics, but it is possible to get a permit where the physiotherapist delivers all services at the patients' residences. This means a very high share of services to disabled as it is primarily this group which requires home treatment, and the physiotherapists without clinic are also expected to have high levels of PSM, because they have actively chosen a job related to the neediest of the patients, i.e. patients with severe mobility problems. Permits can be either full time or part time, and we control for this, because it might be related to the mix of patients. Finally, physiotherapists can either own their clinic or pay another physiotherapist a percentage of the income to use the facilities. The renters are still self-employed, but there might be a tendency for the owners to demand that renters take more difficult patients, and we therefore include a dummy variable measuring whether or not the physiotherapist is a renter.

Differences in the proportions of services given to ordinary and disabled patients can be due to differences in patient composition, and we include the average age and gender composition of the disabled patients, because they are correlated with the morbidity of the patients.

Finally, we also include characteristics of the municipality where the clinic is situated. Using the 'Local Authority Key Data' (www.noegletal.dk), we have controlled all analyzes for the proportion of elderly (+65 years) in the municipality, the social-economic index (see Indenrigs- & Sundhedsministeriet, 2007: section 1.4.1.) and urbanization. As only urbanization had significant effects, only this variable is included in the tables.

The analyses are a series of OLS-regressions. We first analyze each dimension of PSM and then include all three dimensions in the same model. We then add the control variables in three steps: Controls related to the individual physiotherapist, controls related to the patients and municipal level controls.

Results

Table 2 contains ordinary least square (OLS) regressions of individual behavior measured as the share of services to disabled patients among all services. As mentioned, we expect the level of public interest and the share of services to disabled patients to be positively correlated, and model 1-3 in table 2 show that both public interest and attraction to policy making are associated with the share of services to disabled patient in bivariate regressions. The same is the case in a regression

with the three PSM measures (model 4). The compassion dimension does not, however, have a significant effect in any of the regressions. The effect of attraction to policy making disappears when controlling for whether the services are provided from a clinic (model 5). As expected, the physiotherapists without clinic have a much higher share of services to disabled patients. Our interpretation is that they have actively chosen a supplier permit that permits them to prioritize disabled patients. The effect of public interest becomes insignificant when patient age and patient gender is introduced in model 6, and our interpretation is that this reflects that the patient composition mediates part of the effect of the public interest dimension (physiotherapists with high PSM taking in more weak patients). Finally, model 7 shows that the share of services to disabled patients is lower in urban areas, but neither gender nor age (or any of the other control variables) affects the share of services to disabled patients significantly in any of the regressions. Although there is no direct association between public interest and the proportion of services given to disabled patients, the findings give some support to hypothesis 1. Bivariately, the proportion of all services given to disabled patients is higher for physiotherapists with higher levels of public interest, but it is primarily due to different patient composition.

Table 2 here.

The next step is to focus on one service type, and hypothesis 2 expects that the proportion of standard consultations given to disabled patients is higher for physiotherapists with higher levels of public interest. Only analyzing these standard consultations provides a very similar picture to the one we saw for all services. Again, we see (in Table 3) that the bivariate coefficients are statistically significant for public interest and attraction to policy making, whereas compassion does not have a significant effect. The coefficient for attraction to policy making again becomes insignificant when 'no clinic' is included, and public interest again loses statistical significance when we include patient age and gender. This indicates that public interest and attraction to policy making indirectly increases the share of services to disabled, while the level of compassion does not affect the physiotherapists' behavior systematically. The next step is thus to see whether these findings are due to more services to each disabled patient or a higher proportion of disabled patients.

Table 3 here.

Our final analysis concerns hypothesis 3 which expects that the proportion of disabled patients among all patients attending the physiotherapist is higher for physiotherapists with higher levels of public interest. Accordingly, table 4 shows OLS regressions of the share of disabled patients among all patients. Apart from the control variables, which also show interesting results (women and renters have a significantly higher proportion of disabled patients), the table shows that both public interest and compassion have significant positive coefficients in model 1-4. Compassion does, however, become insignificant when including 'no clinic'. As expected in hypothesis 3, high levels on the public interest dimension consistently increase the proportion of disabled patients. This confirms that PSM (especially public interest) first and foremost affect the patient composition, and the next section discusses this finding in relation to the existing literature.

Table 4 here.

Discussion

The consistent effect of public interest on the share of disabled patients indicates that the way physiotherapists try to help disabled patients is to accept (and keep) them as patients. The number of services per patient does not depend on any of the PSM dimension according to a series of regression analyses of the number of services per disabled patient (not shown) corresponding to the ones in table 2-4. Our interpretation is that professional norms to a high degree regulate the actual treatment, whereas the patient selection is not regulated by such norms. This picture is also found for Danish orthopedic surgeons as Andersen and Jakobsen (2009) find that although the economic incentives differ, private and public surgeons behave similarly when it comes to clinical procedures, whereas the private surgeons tend to dump more of the difficult/costly patients.

We expected that physiotherapists with higher levels of public interest PSM provide relatively more physiotherapy to disabled patients and relatively less physiotherapy to ordinary patients, and the expectation receives some, although not unambiguous, support. Public interest PSM clearly affects the share of disabled patients, while the effects on the proportions of service to disabled patients are mediated by other variables. It does not affect the number of services given to each disabled patient, but it does affect the selection of patients. As the investigated physiotherapists have the autonomy to affect both factors, we do not think that the findings are due to special conditions in our case, but our theoretical argument concerning professions surely indicates that it could very well be different for non-professionals (because no professional norm

would then regulate the use of services). In comparison with the existing performance studies which use self-reported performance (e.g. Leisink and Steijn 2009 and Vandenabeele 2009), the associations are a little weaker, but that is only to be expected, given that motivation and behavior are measured by separate data sources. The fact that we find an effect of the public interest dimension therefore strongly indicates that although these studies might exaggerate the association, their general claim is valid. These studies also similarly show that only some of the PSM dimensions affect performance, and the literature has also shown that the different dimensions have different antecedents (Perry, 1997; Andersen, Pallesen & Pedersen, 2009). This indicates that theorizing about dimensions separately is the way forward.

Conclusion

We set out to investigate whether Danish physiotherapists with high scores on the PSM dimensions show more of the behavior which this occupation sees as most beneficial to society (physiotherapy to disabled patients). Based on theoretical arguments and existing empirical studies, we hypothesized that high levels of the PSM dimension public interest would lead physiotherapists to provide more physiotherapy to disabled patients. This expectation was partially confirmed. Physiotherapists with high public interest have a higher proportion of these patients, but they do not give each patient more services.

This is a strong test in three ways. First, economic incentives induce the physiotherapists to prioritize ordinary patients, as the fees are identical and disabled patients require more time. Second, the study shows that PSM can be found and have consequences on behavior in the private sector. This is a very relevant contribution to the development away from seeing PSM as a public sector monopoly (Steen, 2008). In Perry and Wise's original formulation (1990), they only expected PSM to affect performance in the public sector, but the result in this paper underlines the importance of the trend toward emphasizing the service in public service motivation, as the paper shows that PSM can also be important in the private sector. Third and most importantly, we show that the findings in studies using self-reported performance measures can also be found in this study, which uses register data on behavior. We thus contribute to establishing the link between the PSM dimensions and behavior (and ultimately performance). There is still work to be done on the relationships between PSM, behavior and performance, but this paper indicates that this is a potentially fruitful avenue for future research. If we can identify more specifically what types of motivations that systematically makes individuals resist the temptation of the incentives and

prioritize the neediest (in this case the handicapped patients), the real-world implications of this research can be significant.

Obviously, the study also has limitations. It holds the macro-institutional context constant, and the results cannot necessarily be generalized to countries other than Denmark. We do not, however, have reason to expect that Denmark is special in a way leading to different effects of PSM, but the results cannot be generalized statistically. Finally, we only investigated the relationship for one occupation, and this is a weakness in terms of generalizability. Physiotherapists have a relatively high level of professionalism, and future research ought to investigate whether PSM also affects individual behavior for occupations with low professionalism.

Even considering the limitations, the findings have important implications. As Brewer (2008: 146) recommends, this study has begun to unpack the public service motivation concept and strategically explore subdimensional relationships. Although we should continue along this avenue of research, we think that we should also maintain the focus on PSM as the conceptual frame. Although PSM is a multidimensional construct, it has an overarching meaning, as all the dimensions concern different types of orientations to delivering service to people with the purpose of doing good for others and society.

This investigation can be viewed as the first step towards linking the PSM dimensions and performance more robustly, because it shows that different PSM may lead to different priorities between the different tasks, involving varying degrees of pursuit of public good. This is very useful knowledge for improving the practice of public management, both in terms of recruitment and targeting leadership strategies to the PSM of the providers of public service.

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Appendix A. Principal component analysis.

Table A1 here

Table A2 here

Table A3 here

Table a4 here.

Appendix B. Service description.

Table b1 here.

Table 1: Descriptive statistics

Variable	Definition	N	Mean	Std. Dev.	Min	Max	Source
Share of all services to disabled patients	Share of all services provided to disabled patient with progressive diseases of all services provided.	544	0.39	0.21	0	0.99	Danish Health Insurance Register
Share of standard consultations with disabled patients	Share of standard consultations provided to disabled patient with progressive diseases of all standard treatments.	542	0.36	0.20	0.01	0.99	Danish Health Insurance Register
Share of disabled patients	Share of disabled patients among all patients attending the physiotherapist in a given year						Danish Health Provider Register
Public interest	Additive index of four items (see Table A1 for wording of questions)	519	68	21	0	100	Survey
Attraction to policy making	Additive index of three items (see Table A2 for wording of questions)	532	48	20	0	100	Survey
Compassion	Additive index of three items (see Table A3 for wording of questions)	539	74	17	0	100	Survey
Gender	Gender of respondent (1= male)	528	0.39	0.49	0	1	Survey
Age	Age of respondent	527	42	10	24	78	Survey
Public sector experience	Dummy variable indicating whether respondent has been employed in public sector	525	0.66	0.47	0	1	Survey
No clinic	Dummy variable indicating whether the supplier permit for service provision without clinic	593	0.03	0.17	0	1	Danish Health Provider Register
Part time	Dummy variable indicating whether the supplier permit is part time (as an alternative to fulltime)	593	0.68	0.47	0	1	Danish Health Provider Register
Renter	Dummy variable indicating whether the physiotherapist is a renter (or owns (part of) her clinic)	593	0.60	0.49	0	1	Danish Health Provider Register
Share of female patients	Percentage of disabled patients who are females.	581	0.60	0.13	0.17	0.95	Danish Health Insurance Register
Average age of patients	Average age of disabled patients.	584	56.0	7.31	12.4	77.9	Danish Health Insurance Register
Urbanization of municipality	Urban population in per cent.	580	85.9	11.7	57.5	100	Local Authority Key Data

Table 2: OLS regression of individual behavior (share of services to disables patients among all services). Unstandardized coefficients; p-value in brackets.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Public interest	0.001** (0.008)			0.001* (0.048)	0.001* (0.048)	0.001 (0.128)	0.001 (0.154)
Attraction to policy making		0.00090* (0.049)		0.001* (0.034)	0.001 (0.178)	0.001 (0.153)	0.001 (0.232)
Compassion			0.001 (0.100)	0.001 (0.178)	0.000 (0.416)	0.001 (0.222)	0.001 (0.254)
Gender (male=1)					-0.012 (0.495)	-0.024 (0.197)	-0.023 (0.229)
Age					-0.001 (0.304)	-0.001 (0.274)	-0.001 (0.251)
Public sector experience					0.000 (0.989)	-0.005 (0.790)	-0.009 (0.649)
No clinic					0.542*** (0.000)	0.529*** (0.000)	0.551*** (0.000)
Part time					-0.013 (0.491)	-0.010 (0.608)	-0.017 (0.368)
Renter					0.018 (0.365)	0.011 (0.561)	0.029 (0.142)
Share of female patients						-0.141 (0.055)	-0.133 (0.071)
Average age of patients						0.001 (0.233)	0.002 (0.145)
Urbanization of municipality							-0.003*** (0.000)
Constant	0.313*** (0.000)	0.351*** (0.000)	0.331*** (0.000)	0.238*** (0.000)	0.307*** (0.000)	0.325*** (0.001)	0.561*** (0.000)
R ²	0.013	0.007	0.006	0.025	490	486	474
N	519	532	539	508	0.222	0.233	0.251

Note: *p < 0.05; **p < 0.01; *** p < 0.001

Table 3: OLS regression of individual behavior (share of standard consultations to disabled patients among all standard consultations). Unstandardized coefficients; p-values in brackets.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Public interest	0.001** (0.006)			0.001* (0.047)	0.001* (0.033)	0.001 (0.073)	0.001 (0.085)
Attraction to policy making		0.001* (0.037)		0.001* (0.023)	0.001 (0.148)	0.001 (0.145)	0.000 (0.213)
Compassion			0.001 (0.085)	0.001 (0.128)	0.000 (0.410)	0.001 (0.293)	0.000 (0.362)
Gender (male=1)					-0.014 (0.404)	-0.022 (0.199)	-0.020 (0.240)
Age					-0.001 (0.187)	-0.001 (0.123)	-0.002 (0.112)
Public sector experience					0.005 (0.788)	-0.000 (0.991)	-0.002 (0.905)
No clinic					0.558*** (0.000)	0.550*** (0.000)	0.567*** (0.000)
Part time					-0.006 (0.708)	-0.002 (0.921)	-0.008 (0.635)
Renter					0.018 (0.300)	0.014 (0.446)	0.029 (0.114)
Share of female patients						-0.081 (0.231)	-0.073 (0.282)
Average age of patients						0.002 (0.130)	0.002 (0.079)
Urbanization municipality							-0.003*** (0.000)
Constant	0.285*** (0.000)	0.321*** (0.000)	0.307*** (0.000)	0.198*** (0.000)	0.281*** (0.000)	0.255** (0.004)	0.458*** (0.000)
R ²	0.015	0.008	0.006	0.028	0.264	0.273	0.283
N	517	530	539	506	488	485	473

Note: *p < 0.05; **p < 0.01; *** p < 0.001

Table 4: OLS regression of individual behavior (share of disabled patients among all patients). Unstandardized coefficients; p-values in brackets.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Public interest	.001 *** (0.001)			0.001 ** (0.015)	0.001** (0.003)	0.001** (0.007)	0.001** (0.005)
Attraction to policy making		0.000 (0.176)		0.000 (0.154)	0.000 (0.488)	0.000 (0.470)	0.000 (0.595)
Compassion			0.001 ** (0.012)	0.001 ** (0.020)	0.000 (0.746)	0.000 (0.641)	0.000 (0.647)
Gender (male=1)					-0.027** (0.005)	-0.031** (0.003)	-0.031** (0.003)
Age					0.000 (0.705)	0.000 (0.793)	0.000 (0.749)
Public sector experience					-0.005 (0.649)	-0.007 (0.518)	-0.008 (0.453)
No clinic					0.543*** (0.000)	0.540*** (0.000)	0.555*** (0.000)
Part time					0.000 (0.975)	0.002 (0.850)	0.001 (0.919)
Renter					0.028** (0.009)	0.026* (0.017)	0.030** (0.007)
Share of female patients						-0.025 (0.518)	-0.030 (0.445)
Average age of patients						0.000 (0.494)	0.000 (0.757)
Urbanization municipality							-0.001 (0.099)
Constant					0.077* (0.027)	0.073 (0.163)	0.144* (0.028)
R ²	0.019	0.003	0.012	0.028	0.472	0.475	0.473
N	555	569	579	542	521	518	506

Table A1: Principal Component Analysis. Index for public interest.

Item	Loadings
I contribute to my community	0.46
Meaningful public service is very important to me	0.50
I would prefer seeing public officials do what is best for the whole community even if it harmed my interests	0.45
I consider public service my civic duty	0.57
Eigenvalue	1.9

Note: Only one component with an Eigenvalue over 1 was found.

Table A2: Principal Component Analysis. Index for attraction to policy making

Item	Loadings
I associate politics with something positive	0.61
The give and take of public policy making doesn't appeal to me (turned)	0.42
I do not care much about politicians (turned)	0.67
Eigenvalue	1.6

Note: Only one component with an Eigenvalue over 1 was found.

Table A3: Principal Component Analysis. Index for compassion

Item	Loadings
It is difficult for me to contain my feelings when I see people in distress.	0.58
To me, considering the welfare of others is one of the most important values	0.62
I am often reminded by daily events about how dependent we are on one another	0.52
Eigenvalue	1.7

Note: Only one component with an Eigenvalue over 1 was found.

Table B1. Services to normal and disabled patients

Service name	Service description	Fee (user payment) DKK	
		Disabled patients	Normal patients
First consultation	In addition to the primary services (physiotherapeutic examination, information and counseling) the first consultation includes recording of anamnesis, journalization and, if indicated, introductory therapy	379.50 (0.00)	379.50 (230.36)
Normal treatment	The treatment may be biomechanical movement therapy, neuro-physiotherapy, psychomotor movement therapy, ADL occupational therapy (ADL = activity of daily living), pulmonary physiotherapy, manual or apparatus treatment. The treatment always includes follow-up on anamnesis and examination, journalization and reassessment and, if necessary, modification of the therapeutic plan in accordance with the patient's condition since last therapy	253.00 (0.00)	253.00 (153.57)
Short treatment	Short treatment requires less effort than normal treatment like follow-up ultrasound scanning after a sports injury	168.66 (0.00)	168.66 (102.38)
Follow-up rehabilitation therapy	In follow-up rehabilitation therapy, the patient completes an individual rehabilitation program according to instructions	84.33 (0.00)	84.33 (51.19)
Extra charge for particularly time-consuming effort	Can be used as supplement to the normal treatment if one or more of the following symptoms or loss of functional capacity prolong the treatment: <ul style="list-style-type: none"> - spasticity - lost walking or support function - extensive muscular atrophy - extensive coordination disorders - multiple contractions - multiple joint affections 	84.33 (0.00)	84.33 (51.19)

ⁱ Services to disabled are more time-consuming according to the survey (see note iii below) and according to the interview with the chairman of the physiotherapists.

ⁱⁱ A progressive disease is defined as a disease which gets worse and lead to predictable disabilities in for example the nervous system or the musculoskeletal system (Danish National Board of Health, 2008)

ⁱⁱⁱ The statement was: "A standard consultation is typically a little more time-consuming for free physiotherapy (category 62) compared to ordinary physiotherapy (category 51)." A standard consultation is a defined service in the formal agreement and thus gives the same fee for both types of patients. Danish wording of the statement: "En normalbehandling er typisk lidt mere tidskrævende for vederlagsfri fysioterapi (speciale 62) end for almindelig"

fysioterapi (speciale 51).” 52% of the physiotherapists in the survey agreed to this, while 21% answered neither agree nor disagree, and 27% disagreed with the statement.