

Does Public Service Motivation Predict Higher Public Service Performance? A Research Synthesis

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Abstract

In this research synthesis I evaluate the extent to which there is empirical support for the proposition that public service motivation underpins effective service delivery in the public sector. I review all seventeen published studies where a measure of public service motivation is an explanatory variable and a measure of performance, broadly conceived, is the dependent variable. I discuss the strength of the findings in these articles and the contingencies. A major result is that while public service motivation and individual performance are clearly associated, some of the current studies are unnecessarily vague about the link between public service motivation and organizational performance. I propose a simple empirical remedy for this. I conclude by outlining a theoretical aggregation rule to link the individual-level concept public service motivation to organization-level performance, which will help to better integrate studies of the effects of public service motivation into the literature on organizational performance in the public sector.

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Does Public Service Motivation Predict Higher Public Service Performance? A Research Synthesis

Public service motivation broadly denotes an employee's desire to work for what they conceive of as the public interest (Rainey 1982; Perry and Wise 1990). Research on public service motivation is quickly accumulating in public administration, and we know more and more about the antecedents of this type of intrinsic motivation. Yet probably the central idea motivating research on this topic is that public service motivation underpins effective service delivery in the public sector (Perry and Wise 1990; Frey and Oberholzer-Gee 1997; Le Grand 2003). Unfortunately, there is a lack of knowledge about the extent that this proposition is accurate, whether it holds across different types of public organizations and contingencies, and what theoretical mechanism underlies it. Brewer (2008) first reviewed the evidence about this fledgling line of inquiry, and he concluded that there is some rather weak evidence in accordance with the proposition. Since Brewer's (2008) review, ten new studies testing the association between public service motivation and performance have been published. It is therefore timely to synthesize and evaluate the new evidence together with the older studies.

At the beginning of this paper, I clearly define the theoretical concepts involved, and I summarize the existing theoretical argument about the performance effect of public service motivation. Next, I describe the procedures involved in my research synthesis, which covers all published studies in the English language where some measure of public service motivation is an explanatory variable and some measure of public service performance is the dependent variable. After that I discuss the findings of my research synthesis. I also evaluate how much information about contingencies is provided. I conclude by outlining a theoretical aggregation rule to link the individual-level concept public service motivation to organization-level performance, which will help to better integrate studies of the effects of public service motivation into the literature on organizational performance in the public sector.

Theoretical arguments about the effect of public service motivation on public service performance

The ideal to serve the public has a long history. Confucius, Plato, Aristotle, and Thomas Aquinas all discussed the ideal of the virtuous ruler serving the common good. Closer to our time, in the latter part of the 19th century many of the members of the new professional British Civil Service held the philosophical outlook that they should work toward mutual harmony of all members of society who seek to fulfill their potential (Horton 2008). Yet one wonders how much of this ideal persists today, and more importantly, how much of it translates into actual results for citizens. After all, while many public servants may share such a knightly perspective, they may also have knavish traits (Le Grand 2003), pursuing their own material well-being and aggrandizing their organization at the expense of taxpayers (Niskanen 1973). Likely there are elements of both in any given public organization. The key question then becomes whether more public spirited employees perform better individually, and whether a greater prevalence of their kind enhances the effectiveness of public organizations. Over the last twenty-five years a large literature on public service motivation has emerged. The central idea motivating researchers contributing to this literature has been that public service motivation underpins effective service delivery in the public sector (Perry and Wise 1990; Frey and Oberholzer-Gee 1997; Le Grand 2003). I now consider both elements of this suggested relationship more closely. This will prepare the way for my synthesis of the empirical evidence on this relationship.

Public service motivation is generally understood as an employee's desire to work for the public interest (Rainey 1982; Perry and Wise 1990) and covers motives of employees in the public sector desiring to "to do good for others and shape the well-being of society" (Perry and Hondeghem 2008, 3). Two other definitions are a bit broader: Rainey and Steinbauer (1999, 20) define public service motivation as a "general, altruistic motivation to serve the interests of a community of people, a state, a nation or humankind" and Brewer and Selden (1998, 417) define it as "the motivational force that induces individuals to perform meaningful [...] public, community, and social service." The essence of the concept is that it is one type of intrinsic motivation, concerned with the well-being of others. Intrinsic motivation denotes mainly being motivated by the activity itself (DeCharms 1968, Deci 1975), whereas extrinsic motivation denotes mainly being motivated by an external incentive, most prominently a monetary reward. Le Grand (2003, 36) distinguishes between two types of intrinsic motivation that is concerned with the well-being of others: act-irrelevant altruism and act-relevant altruism. Both types of altruism describe people who are concerned about the situation of a person or group. The distinction is that people with act-irrelevant altruism will be content if the person or group they are concerned with are helped by anyone, whereas people with act-relevant altruism will be content if they provide the help themselves. The latter is also referred to as 'warm glow' motivation (Andreoni 1990). Public service motivation as discussed here fits more closely with act-relevant altruism. The most relevant operational definition and the current gold standard for measuring public service motivation is Perry's (1997) scale, which is a refinement of a very extensive scale proposed by Perry (1996). It covers four dimensions that are covered by several survey items each: Attraction to Policy Making (3 items), Commitment to the Public Interest/Civic Duty (5 items), Compassion (8 items), and Self-Sacrifice (8 items). The survey items are presented in Exhibit 1.

Exhibit 1: Perry's (1997, 187) public service motivation scale

Attraction to Policy Making

- 1) Politics is a dirty word. (reversed)
- 2) The give and take of public policy making doesn't appeal to me. (reversed)
- 3) I don't care much for politicians. (reversed)

Commitment to the Public Interest/Civic Duty

- 4) It is hard for me to get intensely interested in what is going on in my community. (reversed)
- 5) I unselfishly contribute to my community.
- 6) I consider public service my civic duty.
- 7) Meaningful public service is very important to me.
- 8) I would prefer seeing public officials do what is best for the whole community even if it harmed my interests.

Compassion

- 9) It is difficult for me to contain my feelings when I see people in distress.
- 10) Most social programs are too vital to do without.
- 11) I am often reminded by daily events how dependent we are on one another.
- 12) I am rarely moved by the plight of the underprivileged. (reversed)
- 13) To me, patriotism includes seeing to the welfare of others.
- 14) I have little compassion for people in need who are unwilling to take the first steps to help themselves. (reversed)
- 15) There are few public programs that I wholeheartedly support. (reversed)
- 16) I seldom think about the welfare of people I don't know personally. (reversed)

Self-Sacrifice

- 17) Doing well financially is definitely more important to me than doing good deeds. (reversed)
 - 18) Much of what I do is for a bigger cause than myself.
 - 19) Serving other citizens would give me a good feeling even if no one paid me for it.
 - 20) Making a difference in society means more to me than personal achievements.
 - 21) I think people should give back to society more than they get from it.
 - 22) I am prepared to make enormous sacrifices for the good of society.
 - 23) I am one of those rare people who would risk personal loss to help someone.
 - 24) I believe in putting duty before self.
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One issue that causes slight concern is that items 10) and 15) in the Compassion dimension also seem to capture a preference for an active role of government in those areas where it is currently active, which may be distinct from public service motivation. For instance, someone might oppose several social programs that in their opinion benefit only a few and not necessarily needy people. Yet that same person might have a high level of public service motivation. In future research, it might be interesting to evaluate a slightly reduced scale without these items. Also, future research would benefit from at least considering behavioral indicators, yet there are obvious practical difficulties. The current data on public service motivation all stem from surveys, which might suffer from social desirability biases (Le Grand 2003, 34). In spite of these concerns, Perry's (1997) scale remains the best and most widely accepted measure of public service motivation.

There are three points to note about the reach of the concept of public service motivation. First, public service motivation is not mere risk-aversion. Perry and Hondeghem (2008, 3) stress that public service motivation is distinct from "public sector motivation." The latter would indicate being motivated by greater job security, better pension plans, and the other

extrinsic benefits of employment in the public sector. Of course, some would argue that these overlap with public service motivation to a large extent. To be clear, what Perry and Hondeghem (2008) and I are concerned with is public service motivation net of the extrinsic benefits of work in the public sector. Such an understanding is necessary because otherwise research on the performance consequences of public service motivation would be moot: It would be reduced to research on the question of whether public organizations perform better or worse than private or non-profit organizations (also see Brewer and Selden 1998, 417 on this point). Also, because of this point, evidence from studies looking at purely at distinctions between employees in the public sector and the private sector without separately measuring public service motivation is not included in this research synthesis because it would be impossible to disentangle other aspects of being employed in the public sector from public service motivation (for a different view, see Brewer 2008, 139-140). Second, public service motivation is a subset of intrinsic motivation (Crewson 1997; Houston 2000; Steijn 2008). In the case of professors, surely there are quite a few whose research is primarily inspired by a desire to better the lives of the public in one way or another. Yet other aspects of creating knowledge are more important for others. The obsessive quest of some professors to develop theoretical arguments about arcane and bizarre questions would be hard to explain if public service motivation were their main driving force. Public service motivation rather is a specific type of intrinsic motivation that is concerned with the well-being of others. Steijn (2008, 15) consequently suggests that public service motivation be considered "an intrinsic-sociocentric work orientation." Finally, there is the issue that while public servants might honestly think that they are furthering the public interest (however understood) with their work, they may in reality only benefit a very select clientele, or even make almost everyone worse off. An analogy to this problem is provided by an old joke about three boy scouts, whose leader asks them what good deed they did today. The boys answer that they helped an old lady to cross the street. The leader asks why all three of them had to help her. The boys respond that the old lady did not really want to cross the street. While this problem may not occur very often, the ambiguity of the notion of the public interest nevertheless requires it to be considered.

Public service performance, i.e. the performance of workers and organizations in delivering public services, is a multi-faceted concept. It can be understood in an expansive or a more narrow way. The expansive understanding includes factors internal to an organization such as job satisfaction, organizational citizenship behavior (voluntarily helping others in the workplace, see Smith et al. 1983, Organ 1988), and organizational commitment (the strength of a person's attachment to and involvement in an organization, see Grusky 1966). All of these have in turn been shown to be conducive to performance understood more narrowly, namely as outputs and outcomes, in particular efficiency, effectiveness, and equity (Boyne 2002a). There is a veritable multitude of operational definitions of performance (for an extended discussion of the challenge of measuring performance in the public sector, see Boyne et al. 2006). They can be classified in terms of the unit of analysis, i.e. organization, service, work unit, or individual worker; and in terms of the method by which they are collected, i.e. based on records about processes, results, and behaviors, judgments by and perceptions of external actors such as regulators and citizens, or perceptions and statements of the workers who are evaluated.

Existing theoretical arguments linking public service motivation and performance do not go too far beyond the notion that motivated employees will perform better. The major exception is a theoretical paper by Francois (2000), wherein he provides a rationale for retaining service delivery within government instead of contracting it out. Francois (2000) makes the assumption that government agencies can credibly commit not to make up for any shirking by workers, whereas profit-maximizing firms contracted by the government cannot make such a commitment. Workers with public service motivation will then put in high effort in government agencies, whereas they will only work to extent they are induced

to by their contract in profit-maximizing firms, which is more costly. Across this diverse literature, the proposition that public service motivation positively affects performance consistently emerges. I now discuss the method by which I find and review the existing studies testing the proposition.

Method

Whenever there are several empirical studies relevant to one question, a research synthesis is helpful. This paper contains a research synthesis as understood by Cooper and Hedges (2009, 6): a systematic review of the existing evidence on the effect (if any) of public service motivation on performance. One way to think about a research synthesis is as a "form of survey research in which the subjects interviewed are not people but research reports" (Lipsey 2009, 157). My research synthesis covers seventeen studies. While there is significant conceptual and empirical variation between these studies, all address the proposition that public service motivation positively affects performance. Also, across all studies, the explanatory variable is roughly comparable and the dependent variables fall into four main categories. The empirical research conducted in all studies reviewed here are also similar at a fundamental level. All are observational studies (Cochran 1965, 234). All are cross-sectional. And the measurement of the explanatory variable public service motivation is based on self-reported survey items in all of them. Given these conditions, *ex ante* it is clear that firm inferences will be difficult to draw. Yet Cooper and Hedges (2009, 11-12) note that there is value to a research synthesis even in challenging circumstances, as it not only precisely summarizes the state of knowledge about a question but also clarifies patterns of methodological and empirical issues that could be re-evaluated in a fresh light.

To find all relevant studies published to date, I conducted Thomson Reuters Web of Knowledge topic searches for all articles about "public service motivation" or "public service ethos" or "altruism" or "prosocial," coupled with "performance" or "effectiveness" or "outcomes" or "results." This yielded an initial 49 articles. I then checked all of these articles to filter out irrelevant ones. Next I followed up this search by looking for further relevant work in the references sections of the relevant articles as well as related works and conducting a similar search using Google Scholar. The studies found include those covered in Brewer's (2008) earlier review, as well as ten that have been published since. Since most work on public service motivation, and even more so its consequences is fairly recent, the literature search was a bit easier than it would have been for other topics. For long-standing research topics, one might have to go back decades, which sometimes causes greater difficulty in finding all relevant studies by electronic means (Reed and Baxter 2009, 80). One challenge that clearly applies to the present topic is the potential existence of quite significant amounts of "grey literature," which is defined as works "produced on all levels of government, academics, business and industry in electronic and print formats not controlled by commercial publishers"(Rothstein and Hopewell 2009, 104). Yet since this literature has not successfully passed peer review, for the moment I have chosen to exclude it and to only cover published research testing the association between public service motivation and performance. The final result of my search are seventeen articles that are listed in Tables 1 and 2.

At this point, I evaluate the empirical evidence about a link between public service motivation and performance using a version of the 'vote counting' approach. Vote counting has been employed in research on educational results (Hanushek 1996) and organizational performance (Boyne 2001). In its most basic form, this approach consists of dividing studies or findings into three groups: (i) statistically significant positive results; (ii)

statistically significant negative results; and (iii) statistically insignificant results. Positive is defined as being in accordance with the hypothesis. Since the hypothesis examined in this paper (higher levels of public service motivation are associated with higher performance) is in the positive direction, this convention is very intuitive. Having tallied results in all three categories, the category with the most studies or findings is then reported as containing the preponderance of evidence. A variant of vote counting is the support score methodology, wherein the number of tests within an article supporting a statistically significant positive relationship between public service motivation and performance is divided by the total number of such tests within the same article (for an example, see Boyne 2001, 2002b). I provide support scores for all articles. I also provide the ratio of statistically negative to statistically positive findings, which in principle is more interesting than the support score because it is not affected by the file drawer problem whereby studies with no or too few statistically significant results are less likely to get published (Dickersin 2005). Generally, it is preferable to go beyond such simple tallies because they ignore statistical uncertainty. Recall that any frequentist test of statistical significance addresses the question 'if the process in question follows the distribution under the null hypothesis (i.e. there is no effect), how *often* will we observe an extreme result?' If a result is extreme enough so that it would occur less than five per cent of the time if the null were indeed true, the convention is to reject the null hypothesis and speak of a statistically significant result. This is a convention because any given result could still be a result of chance; the test only addresses the *frequency* of observing results of different strengths if the process were described by the distribution under the null hypothesis. In any case, taking the logic of statistical inference from the level of the individual study to the set of all studies, if one has twenty studies with statistically significant findings, one of these findings may be expected to have arisen by chance. Basic vote counts and support scores do not take into account this possibility. The problem is made a bit more complicated in my research synthesis because some of the studies I review use the same data set. To not only take into account this statistical uncertainty but also be able to give a rough estimate of the magnitude of the relationship between public service motivation and performance, in the next iteration of this paper I will consider treating some of the dependent variables as comparable and then compare effect sizes across these studies, which is the approach taken by Smith and Glass (1977) and endorsed by Lipsey (2009, 148).

I now proceed to examining the strength of the evidence in accordance with a positive effect of public service motivation on performance. I also comment briefly on research design.

Findings

In Table 1, all studies are listed. The first important commonality of all seventeen studies is that they exclusively rely on the same respondents to obtain both the indicators of public service motivation (right-hand side) and performance, broadly conceived (left-hand side). The studies have the following sets of outcome variables: (i) observed about the individual; (ii) stated by the individual; (iii) perceived about the work unit; and (iv) perceived about the organizations. (i) are made up of external evaluations of the individual in question, namely pay grade and job performance evaluations. While they are still provided by the individual asked in the survey, they come closer to external measures because an individual would have to willingly and consciously lie in order to provide a divergent response. Also, they may well consider the lie to be futile because at least the pay grade could be verified by the researcher. (ii), (iii), and (iv) on the other hand are the individual's claims and perceptions. (ii) is also about performance in a broad sense, capturing both how respondents consider themselves to perform and factors conducive to their performance, namely job satisfaction and organizational citizenship and commitment. Misleading

statements do not require the conscious effort than a false answer to (i) would. (iii) and (iv) capture the individuals perceptions about how their part of the organization and the whole organization is performing. In eleven of the seventeen studies, the dependent variables fall into category (ii), stated by the individual. Three studies have dependent variables in category (i), observed about the individual. What about categories (iii), perceived work unit performance, and (iv) perceived organizational performance? A problem with the studies covering these two dependent variables becomes apparent: With the exception of Ritz (2009), who clearly focuses on category (iii), perceived work unit performance, three other studies have dependent variables that attempt to measure both (iii) perceived work unit performance and (iv) perceived organizational performance at the same time (Brewer and Selden 2000; Kim 2005; and Park and Rainey 2008). From the results reported in these studies it is impossible to identify whether the association between public service performance and performance is driven by work unit performance or organizational performance or both. While the three studies contain checks that the items capturing work unit performance and organizational performance are sufficiently highly correlated to be collapsed into one index, this does not exclude the possibility that the relationship is driven by one or the other. Apart from this issue, the first major insight is that the current evidence is dominated by statements made by individuals about their own performance or about factors that are known to be conducive to organizational performance.

How does the proposition that public service motivation enhances performance fare in the pool of the currently seventeen published studies on this topic? For this purpose, I contrast studies with support scores in excess of 50% (i.e. more than half of the tests in a study show a statistically significant positive relationship) to the rest. Looking at category (i), observed about the individual, two studies (Brewer and Selden 1998 and Naff and Crum 1999) have support scores of 100% whereas Alonso and Lewis (2001) contains little evidence in accordance with the proposition (the support score is 19% and there are as many statistically significant negative as statistically significant positive results). A closer look at Alonso and Lewis shows that they used two different data sets and conducted their tests on each of them. The first is the 1991 U.S. Office of Personnel Management's Survey of Federal Employees and the second the 1996 U.S. Merit System Protection Board's Merit Principles Survey. Naff and Crum (1999) also use the 1996 Merit Principles Survey. The results from the 1991 Survey of Federal Employees show a negative relationship between an employee scoring highly on a single item capturing the Commitment to the Public Interest dimension of Perry's (1997) scale and their pay grade. Amongst all seventeen studies, this is the only one that shows a statistically significant negative association between public service motivation and performance. On the other hand, looking at the 1996 Merit Principles Survey, the relationship between an index covering all four dimension of public service motivation and observed individual performance is positive both in Naff and Crum (1999) and Alonso and Lewis (2001). The two studies contain different estimators and a number of the covariates differ yet the estimated size of the relationship is nearly the same and positive and statistically significant in both studies. Looking at category (ii), stated by the individual, eight studies have support scores in excess of 50% (Crewson 1997; John and Johnson 2008; Kim 2006; Leisink and Steijn 2009; Liu et al. 2008; Pandey et al. 2008; Park and Rainey 2008; and Wright and Pandey 2008), whereas only three have support scores of 50% or less (Bright 2008; Steijn 2008; Taylor 2008). A clear statement about category (iii), perceived work unit performance can only be made based on Ritz's (2009) study. He conducts two tests, whether a two-item index capturing Attraction to Policy Making predicts procedural efficiency (cost reduction, process simplification, and timeliness of decision-making), and whether a three-item index capturing Commitment to the Public Interest predicts procedural efficiency. Finally, three studies (Brewer and Selden 2000; Kim 2005; and Park and Rainey 2008) capture both categories (iii), perceived work unit performance, and (iv) perceived organizational performance. All three of them have

support scores of 100%. Unfortunately, both Ritz (2009) and particularly the last three studies remain open to the criticism that the measure of organizational performance (responses from employees of the same organization) are invalid. A simple way to strengthen the claims made in these studies will be to re-examine the data used in the four articles by decomposing the variance of the dependent variable. First, respondents will need to be tagged within the data set with their home agency or department. Total variation in perceived organizational performance will then be decomposed into two mutually exclusive and exhaustive parts: variation within each agency or department, and variation between the agencies and departments. If it can be shown that the variation between the agencies and departments is greater than the variation within each agency or department, the case that the articles indeed contain information about an association between public service motivation and organizational performance will be stronger, and critics will have less of a case arguing that the values of perceived organizational performance contain far more information about the individuals responding to these survey items than about the organization they work in.

Six of the seventeen studies include tests whether an association between public service motivation and performance is moderated by one or more variables. These moderators are: (1) whether or not employees are convinced that job performance is rewarded in their organization by promotions and pay raises (Alonso and Lewis 2001; Taylor 2008); (2) the extent to which employees perceive congruence between their own values and goals and the goals and culture of the organization (Bright 2008; Wright and Pandey 2008); (3) the extent to which employees encounter transactional and transformational leadership (Park and Rainey 2008); (4) whether or not employees feel their current job is useful to society (Steijn 2008); and (5) the quality of employee's work relations with management and their co-workers (Taylor 2008). With the exception of (5), these variables do moderate the association between public service motivation and performance. This suggests that there is an opportunity for future studies to combine some or all of these moderators and to test them in new contexts.

Brewer (2008) already discusses the problems with making causal inferences based on partial correlations between variables from the same survey, administered to a cross-section. Given that addressing this issue requires substantially different research designs, it is best addressed elsewhere. Another, more limited methodological issue provides an opportunity for better inferences from the same or similar data as used by the studies reviewed here. With the exception of Liu et al. (2008), all studies discussed in this paper are based on probability sample surveys and therefore have to contend with potential non-response bias. Information about people drawn as part of the probability who did not respond constitute missing data. The missing data problem is increased when it comes to the data analysis stage. Many survey respondents do not answer all items. The former type of missing data is ubiquitous (Groves and Couper 1998). It is generally best addressed *ex ante*, by attempting to increase the response rate. The latter type of missing data is still mostly addressed by completely omitting observations for which the value of one or more variable is unknown, which is referred to as listwise deletion. All studies except Park and Rainey (2008) take this approach (cf. Table 2). Park and Rainey (2008) impute the missing values for respondents who did not answer all questions. Their imputation method fills in the most likely value of a response based on information that is available about the partially missing observations and similar observations with complete information. What are the consequences of missing data at both levels (nonresponse and incomplete responses)? It depends how these data are missing. In Little and Rubin's (1987) framework, the missing data can be (1) Missing Completely At Random, where inferences from the observed data allow are not biased because of the missing data; (2) Missing At Random, where inferences from only the observed data will be biased but the missing data can be predicted from the observed data and they together allow for unbiased inferences; and (3) Non-Ignorable,

where inferences from only the observed data will be biased and the missing data cannot be predicted from the observed data. While response rates cannot feasibly be addressed especially for government-produced surveys, the second type of missing data could be dealt with differently. Implicitly, all studies but Park and Rainey (2008) make the strong assumption that observations where respondents only answered some questions are Missing Completely At Random. This could be represented by someone filling out the survey with a pen that fails to release ink at certain questions. To relax this assumption, the use of imputation techniques such as the one presented in Park and Rainey (2008) could strengthen our inferences about public service motivation, as long as these observations are not missing in a Non-Ignorable way.

Conclusions

There is quite a bit of evidence that public service motivation is positively associated with individual attributes that are conducive to organizational performance down the stream, particularly job satisfaction but also organizational commitment and organizational citizenship behavior. There is also evidence across contexts that public service motivation enhances work unit and organizational performance, or at least the perceptions thereof. What is still missing is evidence using performance indicators not drawn from the same survey that is used to measure public service motivation. At the individual level, it may be best to focus on organizational settings where individual performance can be measured more easily, for instance the productivity of researchers. Yet the greater challenge lies in developing proper studies at the organizational level. What is required here is a theoretical mechanism that describes how the extent to which employees of a public organization possess public service motivation affects the performance of this organization. Since public service motivation is an individual-level concept whereas organizational performance refers to the organization as a whole, an aggregation rule is needed (Coleman 1990). It appears promising for such a rule to require public service motivation to be sufficiently high at all levels of the organization (from management to operations at the street level), in order for it to consistently affect the efficiency, effectiveness, and equity of the results produced by the organization. Such a new theoretical approach could then inform new empirical research that differs from the existing studies reviewed here not the least by considering the role of street-level employees (Brehm and Gates 1997; Lipsky 1980) and their motivations. Brewer et al.'s (2000) approach for developing a more differentiated measure of public service motivation might serve as an inspiration for the necessary development of a 'street-level' measure of public service motivation. Clearly, the work on the effect of public service motivation on organization has only just begun.

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Tables

Table 1: Summary of studies

Study	Support score	Ratio of negative to positive findings	Number of tests	Sample size	Indicator(s) of performance	Dimensions of Perry's (1997) scale and number of items
Alonso & Lewis 2001	3/16: 19%	3/3 = 1	16	7,329 (1991) & 27,125-27,320 (1996)	<i>(i) observed about the individual:</i> a) federal grade level; b) 'outstanding' performance rating by supervisor yes/no	1991: INT (1); 1996: POL (1), INT (1), COM (1), SAC (2)
Brewer & Selden 1998	1/1: 100%	0/1 = 0	1	1,708	<i>(i) observed about the individual:</i> whistle blown on illegal/wasteful activity yes/no (whole sample had observed such activity)	INT (3)
Brewer & Selden 2000	1/1: 100%	0/1 = 0	1	2,290	<i>(iii)/(iv) perceived about the work unit and organization:</i> organizational performance (index, 6 items)	INT (2), COM (1), SAC (2)
Bright 2008	0/1: 0%	not defined (0/0)	1	206	<i>(ii) stated by the individual:</i> job satisfaction	POL (3), INT (5), COM (8), SAC (8)
Crewson 1997	1/1: 100%	0/1 = 0	1	9,907	<i>(ii) stated by the individual:</i> organizational commitment	INT (1), COM (1)
John & Johnson 2008	2/2: 100%	0/2 = 0	2	348-352	<i>(ii) stated by the individual:</i> job satisfaction	INT (2)
Kim 2005	1/1: 100%	0/1 = 0	1	1,392	<i>(iii)/(iv) perceived about the work unit and organization:</i> organizational performance (index, 12 items)	POL (1), INT (1), COM (1), SAC (2)
Kim 2006	1/1: 100%	0/1 = 0	1	1,584	<i>(ii) stated by the individual:</i> being indirectly helpful to other people in the organization	POL (1), INT (1), COM (1), SAC (2)
Leisink & Steijn 2009	5/6: 83%	0/5 = 0	6	4,130	<i>(ii) stated by the individual:</i> organizational commitment; willingness to exert effort; job performance relative to colleagues	INT (5), COM (1), SAC (1)

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Table 1 continued

Study	Support score	Ratio of negative to positive findings	Number of tests	Sample size	Indicator(s) of performance	Dimensions of Perry's (1997) scale and number of items
Liu et al. 2008	2/3: 67%	0/2 = 0	3	152	(ii) stated by the individual: job satisfaction	POL (3), INT (3), SAC (3)
Naff & Crum 1999	2/2: 100%	0/2 = 0	2	8,086	(i) observed about the individual: 'outstanding' performance rating by supervisor yes/no	POL (1), INT (1), COM (1), SAC (3)
Pandey et al. 2008	2/2: 100%	0/2 = 0	2	173	(ii) stated by the individual: organizational citizenship behavior; organizational commitment	INT (1), COM (1), SAC (3)
Park & Rainey 2008	6/6: 100%	0/6 = 0	6	5,282-5,911	(ii) stated by the individual: job satisfaction (iii)/(iv) perceived about the work unit and organization: productivity; quality of work performed	POL (1), INT (2), COM (1), SAC (2)
Ritz 2009	1/2: 50%	0/1 = 0	2	10,763	(iii) perceived about the work unit: procedural efficiency	POL (2), INT (3)
Steijn 2008	1/2: 50%	0/1 = 0	2	4,116	(ii) stated by the individual: job satisfaction	INT (1)
Taylor 2008	3/22: 14%	0/3 = 0	22	688	(ii) stated by the individual: job satisfaction; organizational commitment	INT (1), COM (1)
Wright & Pandey 2008	1/1: 100%	0/1 = 0	1	206	(ii) stated by the individual: job satisfaction	INT (1), COM (1), SAC (3)

The four dimensions of Perry's (1997) scale are: POL = Attraction to Policy Making (3 items); INT = Commitment to the Public Interest/Civic Duty (5 items); COM = Compassion (8 items); and SAC = Self-Sacrifice (8 items). I use Bright's (2008) abbreviations. Note that Park and Rainey (2008) denote their three aspects of public service motivation norm-based, affective, and intrinsic. For the purposes of this research synthesis, norm-based items are considered to fall under Perry's (1997) INT dimension and intrinsic items under SAC. The two affective items could not easily be assigned, so they are counted as one each under POL and COM.

Table 2: Background information about studies

Study	Country	Organization(s) and individuals covered	Year(s)	Response rate of original survey	Method of dealing with missing values amongst respondents
Alonso & Lewis 2001	USA	(i) & (ii): full-time white-collar federal employees	a) 1991 b) 1996	a) 54% b) 53%	listwise deletion
Brewer & Selden 1998	USA	full-time executive branch employees in the federal government	1992	64%	listwise deletion
Brewer & Selden 2000	USA	permanent full-time employees in the 23 largest federal government agencies	1996	53%	listwise deletion
Bright 2008	USA	employees of a public health care agency, a city government, and a county jurisdiction, in Indiana, Kentucky, and Oregon	2006 or before	36%	listwise deletion
Crewson 1997	USA	local, state, and federal government employees and primary and secondary school teachers; postal workers are excluded	1989	not provided in the article (the survey is the General Social Survey)	listwise deletion
John & Johnson 2008	UK	employees	2005	not provided in the article (the survey is the British Social Attitudes Survey)	listwise deletion
Kim 2005	South Korea	permanent full-time employees in 9 central government agencies, 5 provincial government agencies, and 26 local government agencies	2001	87%	listwise deletion
Kim 2006	South Korea	permanent full-time employees in 9 central government agencies, 5 provincial government agencies, and 26 local government agencies	2001	87%	listwise deletion
Leisink & Steijn 2009	The Netherlands	employees in national, regional, and local governments, the judiciary and the police, defense, public education, and public university hospitals	2007	44%	listwise deletion

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Table 2 continued

Study	Country	Organization(s) and individuals covered	Year(s)	Response rate of original survey	Method of dealing with missing values amongst respondents
Liu et al. 2008	People's Republic of China	part-time MPA students at a university in Eastern China (employed as social workers, professionals, administrative/ clerical employees, technicians, police officers, and firefighters)	2007 or before	100%	listwise deletion
Naff & Crum 1999	USA	full-time employees in the 23 largest federal government agencies	1996	53%	listwise deletion
Pandey et al. 2008	USA	employees of a state personnel agency in the northeastern part of the country	2006	46%	listwise deletion
Park & Rainey 2008	USA	federal employees in 22 agencies	2000	not provided in the article (the survey is the Merit Principles Survey)	imputed using EM algorithm
Ritz 2009	Switzerland	federal employees	2007	51%	listwise deletion
Steijn 2008	The Netherlands	civil servants from various national departments, the tax agency, and the agency responsible for land and waterways	2006	not provided in the article (the survey was commissioned by the Dutch Ministry of the Interior)	listwise deletion
Taylor 2008	Australia	employees	2005	43%	listwise deletion
Wright & Pandey 2008	USA	managerial and professional employees in 7 public sector organizations in two northeastern states	2005	62%	listwise deletion