Citizens' attitudes towards the public sector, public servants, and politicians – Development and validation of practical survey scales

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Abstract

This study reports the development and the validation of three related attitude scales that measure the attitudes of citizens towards the public sector, the public servants, and the politicians respectively. With three samples ($n_1 = 325$, $n_2 = 320$, $n_3 = 337$), scale items were assessed based on item-scale correlations, internal consistency, and social desirability. Moreover, convergent and discriminant validity were verified, based on the relatedness of the three attitude scales with several focal constructs from the public management literature, including public service motivation and citizens' trust in government. In addition, this study outlines the avenues for further research on how the use of these scales can advance the field of public management, and particularly behavioral public administration.

Key words: Attitudes, public sector, public servants, politicians, scale development, public service motivation, trust in government.

Data: The data and the full analysis protocol (in R) are available for other researchers to retest, elaborate, and compare these scales and data sets with new data collections: Willems, J. (2020, June 18). *Public Servants: Stereotypes, attitudes, reputation, and stigmata*. Retrieved from <https://osf.io/xky93/>

The full research protocol (with R code) is on GitHub:
<https://github.com/MrJurgenWillems/Research/tree/master/Attitudes>

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Introduction

In recent years, the topic of citizen attitudes towards the public sector and public servants have gained importance in academic literature (James, Jilke, and Van Ryzin 2017; Grimmelikhuijsen et al. 2017). For example, Marvel (2016) finds a consistent negative perception among citizens about public service performance as compared to business performance. In parallel, negative widespread stereotypes about public servants have also been identified as an area that needs further attention (Van de Walle 2004). Similarly, citizen attitudes towards politics and politicians have been identified as a crucial factor in the behaviors of citizens to participate in public processes (Nielsen 1981; Inthorn and Street 2011; Henn, Weinstein, and Forrest 2005). With an increased research focus on citizens' attitudes towards the public sector, public servants, and politicians, we can better understand the individual behaviors of citizens in their interaction with public institutions and their interactions with public officials within those institutions (Grimmelikhuijsen et al. 2017). As a consequence, the public management field can substantially benefit from tools that enable us to further explore the differences in the engagement of citizens with public institutions.

However, the present public administration field misses some broadly-applicable attitude measures that can be used for a wide variety of research questions and contexts. It is due to this deficiency that the current approach to quantify the attitudes of citizens often consists of context-specific measures which have been developed for a specific analysis (for example, in specific experiment designs), or for the use of proxy-measures which only partially relate to the actual attitudes of the citizens (e.g. when secondary data is used from public service evaluation surveys). Despite the fact that such earlier studies have great value for theorizing on the attitudes of

citizens, the lack of uniform measures hampers the generalization of findings and the replication in other settings.

Moreover, the attitudes of citizens can focus on very distinct entities. Research on attitudes has its origin in social psychology (Thurstone 1928), and it focuses on explaining the individual differences in human behaviors in relation to a variety of entities (Eagly and Chaiken 2007). Such entities can be very concrete, such as pertaining to a particular person (e.g. a politician), or very abstract (e.g. an ideology). The field of public administration has dealt with the behavior of citizens in the context of a broad range of relevant entities. However, few studies have focused on how behavior of citizens is different based on their attitudes towards distinct public entities. For instance, the overall and abstract government entity contains more specific entities, such as politicians, on the one hand, who make policies on how public institutions should function, and public institutions, on the other hand. Within these institutions, public servants are an even more specific entity that has been widely studied in the field of public administration. As attitudes can be very different for each of these entities, human behavior is potentially also driven differently by them. Hence, the research field could thereby additionally benefit from measurements, each of which focus on specific entities within the broad area of government services.

This study reports on the development and the validation of three distinct, yet related, attitude scales. Such survey scales can help verify theoretical claims and identify avenues for further research. Hence, attitude scales in the field of public services can especially advance research that focuses on explaining the differences within heterogeneous populations. For example, in the research area related to public service biases, attitude studies can add a substantial nuance by

clarifying the extent to which certain individuals are more susceptible to such biases as compared to others. In addition, other streams in the field of public management can benefit from such tools, as attitudes potentially relate to the expectations and the cognitive processes in public performance evaluations (Ryzin 2004; Jilke 2017), the choice of being involved in citizen participation initiatives and co-production (Whitaker 1980; Irvin and Stansbury 2004 ; Clark and Jang 2013; Roberts 2004; Willems, 2017), as well as the decision to enter into public service careers (De Cooman et al. 2011; Becker and Connor 2005; Goulet and Frank 2002; Willems 2014).

Given the aim of developing and validating measurement scales that are helpful for other studies, a set of methodological choices has been made based on four specific goals. First, the study focuses on developing scales that are sufficiently concise (one-dimensional constructs), so that they can easily be integrated in surveys and/or experiment questionnaires, which also contain other constructs. Second, three uni-dimensional scales have been developed in combination and in relation to each other. In doing so, this study provides an insight into the extent to which attitudes towards different entities are similar or distinct. This enables scholars to choose the right entity focus while performing further studies and the appropriate scale to measure it. Third, in order to make the verification quantitative, scales were measured in two different ways (once with all items randomized, and once with the items presented as per entity). This provides an insight as to how the questionnaire format affects the reliability of a scale. This knowledge can additionally be used by scholars to conduct further attitude studies. Finally, the scale content was developed to be relevant across many contexts, and, as a consequence, the focus was not made on specific public services or

government responsibilities, nor on a specific national or regional context.

Attitudes can be measured towards a broad range of entities, such as an organization, a product, an ideology, an individual, or a group of people (Gawronski 2007). Three focal entities were chosen from a broad range of potentially relevant government-related entities: the public sector, public servants, and politicians. A separate attitude scale was developed and validated for each of these foci. Simultaneously validating these three scales enabled clarifying both the relatedness and the distinctness of citizen attitudes towards these three entities. Hence, the choice was made not to develop a scale that focused only on one entity or a concept with several sub-dimensions (e.g. four sub-dimensions in the overall construct of public service motivation (Kim et al. 2013; Perry and Wise 1990) or three dimensions in citizens' trust in governmental organizations (Grimmelikhuijsen and Knies 2017)), but on the simultaneous validation of three related, but distinct, scales. Therefore, the next section provides an insight into the theoretical background, which is at the basis for simultaneously deriving scale items for these three entities. The methodology section reports on the various tests that have been done to assess scale validity, based on three data samples. In the discussion section, attention has been paid to how a stronger focus on individual attitudes in public management can advance various research streams.

Citizen attitudes in the public sector and political context

Attitudes can be defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly and Chaiken 1993, 1; cited in Gawronski 2007, p575). As a result, attitudes can be measured towards a broad set of entities, including people, organizations,

products, ideas, ideologies, groups in society, sectors, nationalities, etc. (Eagly and Chaiken 2007) Moreover, attitudes can be measured among the general population, or among certain groups, such as youth, the workforce, managers, or customers.

Since Thurstone (1928) introduced attitudes as a measurable construct, attitudes have “become one of the most important constructs in social psychology. In fact, it is difficult to imagine what contemporary social psychology would be like without the concept of attitude” (Gawronski 2007, p573). The concept of attitudes has established itself as a crucial factor to explain individual behavior not only within social psychology, but within a wide range of social sciences and disciplines.

With respect to various entities in the field of government research, attitudes have been measured and analyzed within a broad range of research fields and sub-domains. One such domain focuses on job attitudes of the public servants themselves, in which job attitudes are analyzed as a function of organizational context and management practices (Gould-Williams 2004; Albrecht and Travaglione 2003). For example, Vigoda (2000) investigated the effect of organizational politics in public institutes regarding the attitudes of public servants towards their own jobs and have found a negative effect on the organizational politics.

From the perspective of a citizen, the focus of the research has been made on attitudes towards particular services and their public nature, such as public versus private transport (Beirão and Cabral 2007), e-governance and e-government (Kolsaker and Lee-Kelley 2008), and wind-power policies (Ek 2005). On a more abstract level, attitudes towards democracy explain people's trust in government and in public sector reforms (Christensen and Lægreid 2003). Moreover, attitudes towards politics in general can

further be subdivided, as they can vary differently for distinct government levels (Nielsen 1981). This shows that it is appropriate to make a distinction between the operational public services aspect of government and the strategic, political component of it.

In contrast to the more abstract level of attitudes towards government-related entities, very specific individuals can also be the focal entities of research. For example, Inthorn and Street (2011) investigate how celebrity politics, which is the process by which popular celebrities openly endorse politicians and their political programs, can influence the attitudes of youth towards politics. Their research suggests that strongly communicated authenticity about politicians can improve the attitudes of youths towards politics, which, in turn, can influence the choice of young citizens to vote (Henn, Weinstein, and Forrest 2005).

A specific stream of literature has focused on whether the overall attitudes towards government-related entities are either positive or negative. As compared to the private for-profit sector, studies have found that people have a negative attitude towards public service entities (e.g. Marvel 2016). For example, the public sector is often typified as being bureaucratic, slow, and inefficient (Pandey, Coursey, and Moynihan 2007; Marvel 2016; Olsen 2015), which might, in turn, influence the overall attitudes of citizens about public servants and about the political systems in which they operate (Bean and Papadakis 1998). For example, public employees are often portrayed as being lazy, risk-averse, or corrupt in popular media and movies, which strengthen the wide-spread stereotypical thinking about them (Van de Walle 2004).

Methodology

Developing and validating the related scales happened in five steps, following general recommendations on scale development and validation (Bollen and Richard 1991; Foddy 1993; Scherpenzeel and Saris 1997; Borsboom, Mellenbergh, and Heerden 2003; DeVellis 2003). Items and scale validations were based on three distinct samples obtained from two large data collections. Respondents were addressed through Amazon Mechanical Turk (MTurk) for all data collections.

All analyses were conducted in R (R Core Team 2017), with special use being made of the packages lavaan (Rosseel 2012), psych (Revelle 2017), Scale (Giallousis 2015), and corrplot (Wei and Simko 2017). The original data, along with the complete analysis protocol, can be found in the online appendix. This should encourage other researchers to build on this study to further evaluate the scales (e.g. with alternative methods), compare new data collections with the data samples of this study (e.g. in other languages), and/or perform more advanced and additional analyses (e.g. group comparisons based on demographic background variables).

Step 1: Item generation for three related constructs

Adding to the literature that has been postulated above, a list of characteristics about the public sector, public servants, and politicians was derived first. Characteristics were further explored based on the publicly available data on 7,470 word associations by 415 U.S. respondents for 12 professions, including public servants and politicians (Willems 2018; Willems 2020). Figures 1 and 2 give the word clouds of most associated words for the categories *public servant* and *politician*. These characteristics were then used to develop a series of short survey items. In order to increase content validity, the initial

list of items was complemented with lists from individuals who were not associated with the study. Moreover, I started interviewing additional individuals until the lists became redundant and no new items were added. The lists from these interviews included typical associations that are made about the public sector, the public servants, and the politicians by individuals who are not familiar with the academic literature on the subject. This helped verify and extend my initial ideas which were mainly based on the available literature that was reviewed for this study, and it also worked in limiting my own potential personal bias. In all, there were high levels of redundancy across the interviews. This indicated the high degrees of overlapping between academic studies on the subject and lay impressions, and gave confidence that there was a sufficient level of saturation among the items in the study relative to the potential constructs of interest. To avoid acquiescence biases in scale responses (Billiet and Davidov 2008), several items were formulated in the reverse order. In total, 15 items were derived for each focus category (public sector, public servants, and politicians). Subsequently, a final list of 45 items was proofread and evaluated for clarity and exhaustiveness by two native English-speaking scholars in the field of public and non-profit management. The full list of items is given in Table 1.

The items were formulated in such a manner that they could be answered with a 7-point Likert scale, whose elements are as follows: 'Strongly disagree' (-3), 'Disagree' (-2), 'Somewhat disagree' (-1), 'Neither agree nor disagree' (0), 'Somewhat agree' (1), 'Agree' (2), 'Strongly agree' (3). The 7-point scale was chosen as it gives the respondents the opportunity to add more nuance to their answers (as compared to a 5-point scale) (Norman 2010; Alwin 1997).

Figure 1: Cognitive word associations for "public servant" in US (Willems, 2020a; Willems 2020b:
<https://doi.org/10.6084/m9.figshare.12505415>)

Figure 2: Cognitive word associations for "politician" in US (Willems 2020a; Willems 2020c:
<https://doi.org/10.6084/m9.figshare.12505430>)

Moreover, the numeric labels from -3 to +3 has the additional advantage that the sign of a scale value informs us about the absolute negativeness or positiveness in terms of attitudes. For example, in a regression in which an (aggregate) attitude score is explained as a dependent variable, a non-significant constant means that on an average and with all independent variables being zero, a neutral answer was recorded on the scale. In contrast, a significant positive or negative constant provides an indication whether scales were answered in a particular direction.

Step 2: Analysis of two samples to evaluate item quality and construct reliability

In this step, two samples were analyzed to evaluate item quality based on the following three criteria: (1) item-scale correlation, (2) item consistency with other items, and (3) social desirability of items.

Design and data collection.

In the first wave of data collection, 700 MTurk workers in the U.S. completed a questionnaire that would take 10 minutes to complete. Respondents were rewarded with 1.75 U.S. dollars. This is about 10.50 U.S. dollars per hour, which is in line with the call for stronger ethical standards on crowd sourcing workforces (Guidelines for Academic Requesters). However, the compensation was dependent on the fact whether respondents answered basic attention questions correctly throughout the survey. It had been clarified in the assignment to the MTurk workers that payments would be dependent on correctly answering those attention questions.

Data was collected through the means of a Qualtrics survey. Respondents were randomly assigned to one of the two survey streams, which were both analyzed in this study as distinct samples. In one stream, all the 45 items were randomly shuffled and presented in three randomly ordered batches. Hence, in this stream, all the items for all the three scales were asked in a combined manner, and each respondent answered them in different orders. In the second stream, items were grouped as per entity, and thereby, each batch of 15 items focused respectively on the attitudes towards the public sector, the public servants, and the politicians. However, the items within these entity-focused batches were randomized, and the batch order was also randomized (all with the Qualtrics randomization functionality).

Table 1 –Part 1: Full list of items, with factor loadings of CFA for Sample 3

Code	Item	Item Loading ^a	s.e.	CI lower	CI upper	Variance Extracted (R ²)	Comment
Public sector attitudes							
PubSec01	The public sector is less efficient than the private sector.	1.000 ^b		1.000	1.000	.415	
PubSec02	The public sector is not customer oriented.	.909	.089	.734	1.083	.389	
PubSec03	The public sector is disconnected from the people it serves.	1.047	.091	.869	1.226	.515	
PubSec04	The public sector is accessible to all citizens	-.886	.084	-1.05	-.722	.423	
PubSec05	The public sector should be reduced.	1.147	.096	.958	1.336	.560	
PubSec06	The public sector is trustworthy.	-.956	.079	-1.111	-.8	.576	
PubSec07	The public sector is necessary to maintain quality of life in our country.	-.816	.075	-.964	-.669	.447	
PubSec08	The public sector is a waste of money.	1.214	.098	1.022	1.406	.619	
PubSec09	The public sector provides crucial services in our society.	-.777	.07	-.914	-.64	.472	
PubSec10	<i>(The public sector is at least as professional as the private sector.)</i>				<i>Deleted in Step 2 (high social desirability)</i>		
PubSec11	The public sector is innovative.	-.905	.085	-1.072	-.738	.428	
PubSec12	The public sector is effective.	-1.037	.084	-1.202	-.871	.609	
PubSec13	<i>(The public sector is too bureaucratic.)</i>				<i>Deleted in Step 2 (high social desirability)</i>		
PubSec14	The public sector employs more people than necessary.	1.127	.100	.930	1.323	.485	
PubSec15	<i>(The public sector has too many rules and red tape.)</i>				<i>Deleted in Step 2 (low consistency)</i>		

CI: confidence interval

s.e.: Standard error

^a Factor loadings of the confirmatory factor analysis are reported, based on Sample 3; i.e. without the items that were deleted in Step 2 (see comments column).^b Reference loadings (specified to be '1')

Table 1 – Part 2: Full list of items, with factor loadings of CFA for Sample 3

Code	Item	Item Loading ^a	s.e.	CI lower	CI upper	Variance Extracted (R ²)	Comment
Public servants attitudes							
PubServ01	Public servants are corrupt.	1.000 ^b		1.000	1.000	.736	
PubServ02	<i>(Public servants are less competent than employees in the for-profit sector.)</i>						<i>Deleted in Step 2 (high social desirability)</i>
PubServ03	<i>(Public servants are naïve.)</i>						<i>Deleted in Step 2 (low consistency and high social desirability)</i>
PubServ04	Public servants have easy jobs.	.561	.061	.44	.681	.225	
PubServ05	<i>(I think of public servants as very motivated people.)</i>						<i>Deleted in Step 2 (low consistency)</i>
PubServ06	Most public servants can be typified as dedicated.	-.736	.047	-.827	-.644	.527	
PubServ07	Too many public servants are selfish.	1.033	.051	.934	1.133	.719	
PubServ08	Public servants are political puppets.	.965	.053	.861	1.069	.629	
PubServ09	Public servants are lazy.	.897	.054	.79	1.003	.560	
PubServ10	Most public servants are helpful.	-.811	.048	-.904	-.718	.581	
PubServ11	Public servants are overpaid.	1.043	.059	.927	1.16	.603	
PubServ12	Public servants are power-hungry.	1.02	.054	.914	1.127	.657	
PubServ13	<i>(Public servants are altruistic.)</i>						<i>Deleted in Step 2 (low consistency)</i>
PubServ14	Public servants are accessible.	-.664	.051	-.764	-.564	.400	
PubServ15	Public servants are role models.	-.616	.054	-.722	-.51	.325	

CI: confidence interval

s.e.: Standard error

^a Factor loadings of the confirmatory factor analysis are reported, based on Sample 3; i.e. without the items that were deleted in Step 2 (see comments column).^b Reference loadings (specified to be '1')

Table 1 –Part 1: Full list of items, with factor loadings of CFA for Sample 3

Code	Item	Item Loading ^a	s.e.	CI lower	CI upper	Variance Extracted (R ²)	Comment
Public sector attitudes							
PubSec01	The public sector is less efficient than the private sector.	1.000 ^b		1.000	1.000	.415	
PubSec02	The public sector is not customer oriented.	.909	.089	.734	1.083	.389	
PubSec03	The public sector is disconnected from the people it serves.	1.047	.091	.869	1.226	.515	
PubSec04	The public sector is accessible to all citizens	-.886	.084	-1.05	-.722	.423	
PubSec05	The public sector should be reduced.	1.147	.096	.958	1.336	.560	
PubSec06	The public sector is trustworthy.	-.956	.079	-1.111	-.8	.576	
PubSec07	The public sector is necessary to maintain quality of life in our country.	-.816	.075	-.964	-.669	.447	
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PubSec10	<i>(The public sector is at least as professional as the private sector.)</i>				<i>Deleted in Step 2 (high social desirability)</i>		
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PubSec15	<i>(The public sector has too many rules and red tape.)</i>				<i>Deleted in Step 2 (low consistency)</i>		

CI: confidence interval

s.e.: Standard error

^a Factor loadings of the confirmatory factor analysis are reported, based on Sample 3; i.e. without the items that were deleted in Step 2 (see comments column).^b Reference loadings (specified to be '1')

As has been shown by a substantial body of literature, question order can influence the response behavior (Van de Walle and Van Ryzin 2011), the randomization of items and batches attempts to reduce consistent biases in answering in the data. This structure also allows analysis of the extent to which item and scale relatedness are influenced by item order. This is further explored in Step 4 of this analysis. In each batch of 15 items, a sixteenth item was added that contained an attention question, such as 'Answer Strongly Disagree here' or 'Answer the middle option here'.

For both the survey streams, the questionnaire was finished with a 10-item construct to measure social desirability (Strahan and Gerbasi 1972) and a set of demographic questions on gender, age, employment status, and education. The construct of social desirability contains items that invoke answering in a socially desirable manner, which means that these items were answered by most people to conform to the social norms rather than represent real behavior and opinions. Including such a scale enabled testing the extent to which new scale items were potentially influenced by a social desirability bias (Fischer and Fick 1993). It is, therefore, a common step in the process of scale validation to delete items that have a strong correlation with a measure of social desirability. By omitting these items, the overall scale is less susceptible to social desirability biases in the responses. Strahan and Gerbasi (1972) developed two interchangeable scales, each containing ten items. For the first wave of data collection, the first set of 10 items is used, while the second data collection of this study contained the second set of 10 items. Cronbach's alpha values for Samples 1 and 2 are 0.81 and 0.83 respectively.

Results.

In total, 709 respondents started, out of which 702 finished the questionnaire. For 351

respondents, all items of the three constructs were shuffled (325 answered all attention questions correctly), and the remaining 351 were presented with categorized blocks of items (320 answered all attention questions correctly). Thus, a relatively low number of respondents were determined to not be paying sufficient attention while they completed the questionnaire.

Several items were deleted since they either had low correlation with the overall set of items for their respective category (cut-off of 0.4) and/or because their deletion would increase the reliability of the set of remaining items. The deleted items were: PubSec15, PubServ03, PubServ05, PubServ13, Pol04, Pol05, Pol12, and Pol14. The following items had significant correlations with the social desirability construct and were, therefore, also deleted: PubSec10, PubSec13, PubServ02, PubServ03, Pol02, Pol05, Pol07, Pol08, Pol09, Pol15. However, it must be said that these items did not all correlate consistently with the social desirability for both samples. So, it is hard to conclude that some items were consistently biased by social desirability. The final reliability measures for the reduced scales all met the traditional criterion of 0.7.

Step 3: Analysis of a third sample to assess relatedness with other public management constructs (convergent and discriminant validity)

Design and data collection.

Statistical relatedness with other public management constructs was evaluated based on a third sample, which was also obtained through MTurk. In total, 350 respondents were sought from the U.S., leading to a total of 353 respondents, who started the questionnaire. All 353 respondents finished the questionnaire, among whom 337 answered all the attention questions correctly. These respondents received a reward of 2

U.S. dollar reward for completing the questionnaire.

The Qualtrics questionnaire contained the three focal constructs having the remaining items. Cronbach's alpha values are listed as follows: public sector: 0.90; public servants: 0.89; politicians: 0.87. The order of the three attitude pages was randomized for each respondent, and the item order per scale were randomized as well. Similar to the first wave of data collection, each scale was accompanied with an attention question, and respondents who failed to answer all attention questions correctly were removed from further analysis.

Subsequently, all respondents went through eight additional survey pages with the following constructs, for which the order was also randomized for every respondent:

- (1) A short version of public service motivation (PSM) (Vandenabeele and Vries 2013). Public service motivation is the motivation for people to engage in the provision of public goods, and it has been studied mainly among public servants (Perry and Wise 1990). Despite the fact that PSM research mainly focuses on motivations of this particular sub-population, it is relevant amongst a broader population too, as it, for example, is used to explain the

Table 2: Descriptive statistics for measured constructs.

	Mean	s.e.	Min.	Max.
Attitude scales				
Public sector	.20	.06	-2.83	3.00
Public servants	.00	.07	-3.00	2.82
Politicians	-1.18	.06	-3.00	2.00
PSM				
PSM (Short)	1.00	.07	-3.00	3.00
PSM (APS)	.92	.04	-2.00	2.00
PSM (CPV)	1.19	.04	-2.00	2.00
PSM(COM)	1.14	.04	-2.00	2.00
PSM (SS)	.48	.05	-2.00	2.00
Trust in Government				
Competence	-.09	.05	-2.00	2.00
Benevolence	-.29	.06	-2.00	2.00
Integrity	-.59	.05	-2.00	2.00
Government Trust Index (ANES)	2.77	.07	1.00	7.00
Sector employee trust				
Trust in government employees	-.53	.06	-2.00	2.00
Trust in nonprofit employees	.48	.06	-2.00	2.00
Trust in business employees	-.35	.06	-2.00	2.00
Public sector feeling	1.15	.08	-3.00	3.00
Conservative	-.54	.08	-2.00	2.00
Social desirability	.18	.06	-2.80	3.00

n = 327

willingness to choose a job in the public sector among non-public servants (Y. Choi 2017; Lee and Choi 2016; Wright, Hassan, and Christensen 2017). Hence, it is expected to have a certain degree of convergence with the attitude scales, especially towards the public sector and the public servants. The 4-item shortened version of the scale of Vandenabeele and Vries (2013) has been included in this study as an overall, summarizing measure of the multi-dimensional construct of PSM. Answers could be given on a 7-point Likert scale, ranging from strongly disagree (-3) to strongly agree (+3) ($\alpha = 0.97$).

- (2) A multi-dimensional measure of PSM (Kim et al. 2013). This is a 16-item scale having four sub-dimensions, and it was validated based on a broad range of samples across the world. The four sub-dimensions are as follows: attraction to public service (APS; $\alpha = 0.90$), commitment to public values (CPV; $\alpha = 0.85$), compassion (COM; $\alpha = 0.93$), and self-sacrifice (SS; $\alpha = 0.90$). This construct has been included in this study to get an additional insight on how the PSM dimensions relate to the three attitude scales. Similar to the original scale, answers could be given on a 5-point Likert scale, ranging from strongly disagree (-2) to strongly agree (+2). A seventeenth item was included as an extra attention question for this data collection. Fit indices for the confirmatory factor analysis for the overall PSM scale are as follows: p-value (Chi-square) < 0.001 ; CFI = 0.939; TLI = 0.925; RMSEA = 0.078; p-value for the test that RMSEA is less than or equal to 0.05 is less than 0.001; SRMR = 0.051). Despite the fact that not all of them are within the strict cut-off boundaries as has been proposed by Marsh, Hau, and Wen (2004), they show a fairly good model fit and are close to

the overall fit indices as reported by Kim et al. (2013).

- (3) Citizens' trust in government (Grimmelikhuijsen and Knies 2017). This is a 9-item scale having the following three dimensions: competence ($\alpha = 0.93$), benevolence ($\alpha = 0.98$), and integrity ($\alpha = 0.98$). Government as an abstract entity includes the entities of politicians, public services, and public servants. Hence, as a general measure, it can clarify how attitudes of these entities relate to this overreaching trust measurement. Grimmelikhuijsen and Knies (2017) proposes that the focal entity, such as a particular municipality, and the specific public task, such as air-quality policy, can be varied and added to the list of items. Given the overall context of this study and the fact that data collection had happened in the U.S., items had been formulated to focus on the U.S. government. An example item is: 'The U.S. government carries out its duty very well'. Consistent with the original scale, a 5-point Likert scale was used, ranging from strongly disagree (-2) to strongly agree (+2). The fit indices for the confirmatory factor analysis for the citizens' trust in government scale are as follows: p-value (Chi-square) = 0.23; CFI = 0.998; TLI = 0.998; RMSEA = 0.024; p-value for test that RMSEA is less than or equal to 0.05 is 0.929; SRMR = 0.014). These fit indices are similar to, and to some extent even better than, the original study that has been conducted by Grimmelikhuijsen and Knies (2017). Despite the fact that it is not the purpose of this study, this analysis, thus, provides a replication in English, with a focus on the overall U.S. government, of their initial study from the Netherlands. In contrast to Grimmelikhuijsen and Knies (2017), the RMSEA value is within the expected

boundaries as postulated by Marsh, Hau, and Wen (2004).

- (4) Trust in government index. It is a 4-item index of the American National Election Studies (<http://www.electionstudies.org/nesguide/gd-index.htm>), in contrast to the original scale, in which 7-answer points were used for all four questions and were numbered from 1 to 7. The exact answer-option labels of the original 2, 3, or 4-point scales in this index were presented on top of the scales and were outlined for the width of the scale. By asking all the four items as 7-point scales, this scale is more consistent with the other constructs in this study, and traditional multivariate analysis can be used ($\alpha = 0.93$). The inclusion of this scale provides an alternative measure of trust in the overreaching government category.
- (5) Trust in sector organizations (Bader 2016; McDougale 2014). This is a construct that focuses on the trust that respondents have on the people working in different sectors. It is not a multi-item construct, but each of the items focus on a specific entity and are thus meant to explore different levels of trust for different sectors (government, nonprofits, and businesses). An example item is 'Most of the time, we can trust people in nonprofits to do what is right'. Consistent with the original formulation, a 5-point Likert scale was used.
- (6) Public sector feeling (Weißmüller 2016). This is a 1-item scale in which respondents can express the negativity or positivity of their feelings towards the public sector. The item was measured with a semantic difference 7-point scale, with 'very negative' and 'very positive' as the end labels for the scale. For the context of this study, numeric labels

were placed on top of each scale point, ranging from '-3' to '+3'.

- (7) Political party identification. This had been measured with two items, the extent to which the respondents considered themselves to be conservative or liberal, respectively. The two items were formulated as 'Do you consider yourself a conservative/liberal?'. Five answer options were possible: 'definitely not' (-2), 'probably not' (-1), 'Might or might not' (0), 'probably yes' (1) 'definitely yes' (2). The liberal item was reversed, and both items were combined as a measure of conservative political identification. Similar measures have been used in other studies.
- (8) Social desirability (Strahan and Gerbasi 1972). A 10-item construct, similar to the social desirability construct from the first data collection, but with 10 different items. Items were measured on a 7-point Likert scale with the values ranging from 'strongly disagree (-3)' to 'strongly agree (3)'.

Finally, the questionnaire contained demographic questions on gender, age, education, and employment.

Results

Table 2 reports the values for the measured constructs in this data collection.

From the correlational analysis (Figure 3), several insights about convergent and discriminant analysis can be developed. Relatedness of the three focal scales with each other is substantially high, especially the attitudes of the public sector and of the public servants ($r = 0.72$; $p < 0.05$). Given this high relatedness, both scales will be referred to in the remainder of this text as the public service attitude scales. Moreover, attitudes of politicians correlate positively with attitudes

Figure 3: Correlation plot (Wei and Simko 2017), with significant correlations ($p < .05$) presented as numbers and pie-charts. Dark blue indicate strong positive correlations, dark red indicate strong negative correlations. The correlation plot shows the relatedness of the attitude scales with each other, and with other relevant concepts such as public service motivation, trust in government, and political orientation. [<download here>](#)

of the public sector (0.39; $p < 0.05$) and of public servants (0.51; $p < 0.05$).

The public service attitude scales both relate similarly to public service motivation and its four dimensions (values range between 0.25 and 0.34; $p < 0.05$), and it also relates to the different measures of government trust (correlation values range between 0.32 and 0.49; $p < 0.05$). As a consequence, public service attitude scales show consistent

convergent validity with public service motivation and government trust.

In contrast, the attitudes of politicians only relate positively to the government trust measures (even stronger than public service attitudes scales do; correlation values range from 0.56 to 0.67; $p < 0.05$), and not with public service motivation (no significant correlations). This distinct relatedness supports the discriminant validity of the scale

on the attitudes to politicians and suggests that the government has indeed a stronger political connotation than the public sector and public servants entities.

Moreover, when looking at trust in the different sectors (Bader 2016), all the three attitude scales correlate positively with trust in government, with the highest correlation for the attitudes to the politicians ($r = 0.65$; $p < 0.05$). This supports convergent validity. Correlations are also positive, but they are less strong for trust in the non-profit sector (values are around 0.30). However, the public service attitude scales do not correlate or correlate only to a limited extent to the trust in the businesses ($r = 0.18$; $p < 0.05$), supporting discriminant validity of these public service attitude scales. Interestingly, for attitudes towards politicians, a (stronger) significant correlation, as compared to the public service attitudes has been observed for trust in businesses ($r = 0.49$; $p < 0.05$).

The attitude towards the public sector and the public servants relate negatively to political conservatism, which is also consistent with the conservative political program in the U.S. to reduce public services and limit the number of public servants. No correlation exists between the attitudes towards politicians and conservatism.

Despite the fact that correlating items with the social desirability construct in the first data collection were removed, the overall attitude scales still correlated to a limited extent, but they significantly correlated with the social desirability construct (values range between 0.19 and 0.26; $p < 0.05$). These are relatively small effect sizes, but further critical reflection is needed.

Step 4: Assessment of distinctiveness of the three focal scales.

Despite the fact that all the three scales focused on distinct entities in the government and public service field, it is valuable to

explore the extent to which all three scales are distinct from each other from a measurement perspective. Therefore, scale validation tests that are commonly used to get an insight into the discriminant validity of construct dimensions can inform us about the distinctiveness in measurement of the three scales. Therefore, exploratory factor analysis had been done on Samples 1 and 2, and confirmatory factor analysis had been done on Sample 3. However, it has to be noted that the scales in this study are not seen as dimensions of an overall multi-dimensional construct. Therefore, these tests rather explore theoretical and/or mentally associated relatedness of these entities, and the interchangeability of these scales.

From the correlational analysis above, distinctiveness of the attitudes towards politicians from the attitudes towards public services can preliminarily be confirmed due to different relatedness with the citizen's trust in the government and the motivation to engage in public service. However, attitudes towards the public sector and towards the public servants seem substantially less distinct (at least from the perspective of the measurement scale). This is also supported by the outputs of both the exploratory (Samples 1 and 2) and the confirmatory factor analyses (Sample 3) based on the remaining items. For example, when conducting an exploratory factor analysis (Maximum Likelihood, 3 factors extracted, promax rotation, loading cut-off = 0.3) for the stream of completely randomized item order (Sample 1), one factor clearly groups a set of politician attitude items, while the other two factors group combinations of the attitude towards the public sector and towards public servants (one factor with positively formulated items, and one with negatively formulated items). Hence, when asked in a combined manner, measures of attitudes towards the public sector and towards public servants are not very distinct. The exploratory factor analysis in the second sample, i.e. when items are

Table 3: Item loadings for the three 4-item shortened scales, with Cronbach's alpha values for Sample (3).

Code	Item	Item loading
Public sector attitudes ($\alpha = .84$)		
PubSec03	The public sector is disconnected from the people it serves.	.695
PubSec05	The public sector should be reduced.	.795
PubSec08	The public sector is a waste of money.	.833
PubSec12	The public sector is effective.	-.688
Public servants attitudes ($\alpha = .90$)		
PubServ01	Public servants are corrupt.	.878
PubServ07	Too many public servants are selfish.	.871
PubServ11	Public servants are overpaid.	.743
PubServ12	Public servants are power-hungry.	.859
Politician attitudes ($\alpha = .92$)		
Pol01	Politicians are selfish.	.873
Pol03	Politicians are greedy.	.910
Pol11	Politicians are liars.	.851
Pol13	Politicians are power-hungry.	.813

Item loadings report the regression coefficient of the items on a single factor (one factor per entity), after a generalized least squares factor analysis (method="spearman") (Giallousis 2015).

Given that most items are formulated in a negative way, it is recommended to reverse loadings (or item score) when using the scale in other research designs, as positive score are then expressing positive attitudes.

grouped as per entity, shows more clearly the factor loading that is consistent with the entities.

When performing confirmatory factor analysis for the third sample, with three factors (one per entity) and no cross-loading items specified, model fit is not sufficient to conclude clear discriminant validity (CFI = 0.811; TLI = 0.795; RMSEA = 0.102; BIC = 30593.083). However, model fit is still better as compared to the two-factor model with the items of attitudes towards public sector and public servants in one factor (Chi-Square difference = 538.36; df = 2; $p < 0.001$; BIC = 31119.799), and compared to a single-factor model (Chi-Square difference = 1439.9; df = 3; $p < 0.001$; BIC = 32015.511). The modification indices in the three-dimensional models indeed suggest allowing cross-loadings, mainly between the scales of the attitudes towards public sector and towards

public servants. Hence, these factor analyses show that scale distinctiveness is low, or non-existent for the attitudes towards public sector and towards public servants. This has likely to do with the fact that servants are a major part of the sector, and scale items are, therefore, driven by the same mental framework, or latent cognition of public services as a whole. However, from a practical point, this means that both scales are to a large extent interchangeable (e.g. when the research question does not particularly focus on one of the specific entities, they might be combined as a single scale, or used interchangeably). Table 1 reports the factor loadings of the confirmatory factor analysis of Sample 3.

Step 5: Shortened scales for practical use

As the aim of this study is to develop three scales that can easily be integrated in other studies, this step focuses on selecting items

for more concise scales that have enough internal consistency. Based on Sample 2, four items per scale were selected based on a generalized least squares factor analysis with items regressed on a single factor (Giallousis 2015). The four best loading items per scale were selected. In addition, Cronbach's alpha for these items based on sample 3 are reported as a cross-sample validation check. The selected items, loading and Cronbach's alpha values are reported in Table 3. These reduced scales can thus be used as an overall measures of attitude towards the three focal entities. Moreover, a correlational analysis, similar to Step 3, but with shortened scales results in a very similar finding, which can be consulted in the online appendix. Moreover, it has to be noted that most of the remaining items were formulated in a negative manner. It is thus recommended to reverse the loadings or the item scores when using the scale in other research designs, as positive scores are then expressing positive attitudes.

Discussion and further research

The aim of this study was to develop three related attitude scales and test their relatedness with a set of core constructs from the literature regarding public management. These scales can, in turn, be used in the growing body of literature that deals with how the attitudes of citizens towards the public field explain their behavior. Despite the fact that a clear conceptual distinction is possible to be made between the focal entities that are researched, attitudes and measures of the attitudes can be overlapping and mutually influencing (Van de Walle 2008). Consequently, the attitudes towards the public sector in general and public servants as a part of this sector are highly related, and the scales are not clearly distinct. Potentially, social processes of self-selection and socialization of public servants within the sector result in related perceptions among citizens, which, in turn, explains the related

attitudes towards these two entities (Becker and Connor 2005; De Cooman et al. 2011).

Convergent validity could be derived from a relatedness analysis with other public management constructs. The relatedness of trust in government with all the three attitude scales, but especially with the attitudes towards politicians, suggest that the term "government" is broader, and it groups both the political aspect as well as the public service aspect. In contrast, the distinct relatedness with public service motivation, which is more focused on the managerial and operational public service aspect (Perry and Wise 1990) shows that attitudes towards politician are unrelated to concrete motivations.

Moreover, motivation towards public service is not only related or restricted to the public service or the field of government. For example, public service motivation is positively correlated with trust in non-profit organizations (correlations range between 0.28 and 0.35), and less with trust in businesses and government (most correlations are not significant). High public service motivation can thus be fulfilled through participation and involvement in various types of socially oriented organizations, from which some public-sector organizations are an option (Vandenabeele 2007; Vogel and Willems, 2020).

Political orientation, i.e. being rather conservative versus being liberal, also relates differently to the attitudes towards the public sector and the attitudes towards public servants on the one hand, and to the attitudes towards politician on the other hand. Inherent to the conservative political ideology in the U.S., a rather negative attitude exists towards the public sector and its employees (Bean and Papadakis 1998).

A critical note has to be made about the observation that (almost) all constructs in the second wave of the data collection still

correlate to some extent with a measure of social desirability. Potentially, the common question type of the Likert scale items might be at the origin of this level of relatedness. Therefore, further exploration and validations in the field of public management scales could not only consider the item content, but also alternative scale formats, such as the Guttman scale and the semantic differential scale. Such elaboration can continue the clarification of whether the measured relatedness of constructs is the result of substantial relationships or of the tools that we use (George and Pandey 2017).

From a theoretical perspective, the newly developed scales can assist in the advancement of a broader research agenda on the behavior of citizens in relation to public services and the government in general. The attitudes of citizens are the result of culture, wide-spread beliefs, and accumulated personal experiences (James 2011). Attitudes can, thus, be included in further studies to explain the additional variance in individual differences for citizen-bureaucracy interactions, in particular, in the choice pertaining to engaging in citizen participation initiatives and/or public service co-production (Clark and Jang 2013; Yang and Callahan 2007).

Attitudes can also change due to new experiences and information (Eagly and Chaiken 1993). Hence, attitudes are also an important focal concept which can be explained as a dependent variable, for example in the context of public-sector performance evaluations. Initial attitudes can potentially be an important explaining factor, especially in the field of public-performance assessments and citizen-satisfaction evaluations (Van Ryzin et al. 2004; Morgeson 2013). In turn, the impact on attitudes of recurrent changes in satisfaction as a result of experienced performance which deviates

from initial expectation could also be tested. Similarly, in the context of citizen participation and co-production, the experience and the obtained information through this participation might eventually influence the attitudes of citizens (Halachmi and Holzer 2010).

Limitations

In addition to the validation tests in this study, such as item quality, scale reliability, and construct validity (convergent and discriminant validity), several further validation steps could be performed. Despite the fact that citizen attitudes can change over time, further steps could focus on test-retest validity. In addition, further steps are also needed to test the predictive validity, for example, based on the hypothesized effects in the previous section that attitudes might explain the decision to engage in the participation of citizens and co-production initiatives; or attitudes might affect how citizens form an opinion on particular public-service experiences, and with that their satisfaction evaluations.

The open-source nature of this project, with the data being fully available, contributes to this philosophy of further testing and scrutinizing these attitude scales in public management research.

Conclusion

Three related scales on public sector, public servants, and politician attitudes were developed and validated. Attitude scales for the public sector and public servant respectively show low measurement distinctiveness. In contrast, attitudes towards politicians are more distinct also with respect to relatedness with other government-focused constructs.

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Table 1 – Complete: Full list of items, with factor loadings of CFA for Sample 3

Code	Item	Item Loading ^a	s.e.	CI lower	CI upper	Variance Extracted (R ²)	Comment
Public sector attitudes							
PubSec01	The public sector is less efficient than the private sector.	1.000 ^b		1.000	1.000	.415	
PubSec02	The public sector is not customer oriented.	.909	.089	.734	1.083	.389	
PubSec03	The public sector is disconnected from the people it serves.	1.047	.091	.869	1.226	.515	
PubSec04	The public sector is accessible to all citizens	-.886	.084	-1.05	-.722	.423	
PubSec05	The public sector should be reduced.	1.147	.096	.958	1.336	.560	
PubSec06	The public sector is trustworthy.	-.956	.079	-1.111	-.8	.576	
PubSec07	The public sector is necessary to maintain quality of life in our country.	-.816	.075	-.964	-.669	.447	
PubSec08	The public sector is a waste of money.	1.214	.098	1.022	1.406	.619	
PubSec09	The public sector provides crucial services in our society.	-.777	.07	-.914	-.64	.472	
PubSec10	<i>(The public sector is at least as professional as the private sector.)</i>						<i>Deleted in Step 2 (high social desirability)</i>
PubSec11	The public sector is innovative.	-.905	.085	-1.072	-.738	.428	
PubSec12	The public sector is effective.	-1.037	.084	-1.202	-.871	.609	
PubSec13	<i>(The public sector is too bureaucratic.)</i>						<i>Deleted in Step 2 (high social desirability)</i>
PubSec14	The public sector employs more people than necessary.	1.127	.100	.930	1.323	.485	
PubSec15	<i>(The public sector has too many rules and red tape.)</i>						<i>Deleted in Step 2 (low consistency)</i>
Public servants attitudes							
PubServ01	Public servants are corrupt.	1.000 ^b		1.000	1.000	.736	
PubServ02	<i>(Public servants are less competent than employees in the for-profit sector.)</i>						<i>Deleted in Step 2 (high social desirability)</i>
PubServ03	<i>(Public servants are naïve.)</i>						<i>Deleted in Step 2 (low consistency and high social desirability)</i>
PubServ04	Public servants have easy jobs.	.561	.061	.44	.681	.225	
PubServ05	<i>(I think of public servants as very motivated people.)</i>						<i>Deleted in Step 2 (low consistency)</i>
PubServ06	Most public servants can be typified as dedicated.	-.736	.047	-.827	-.644	.527	
PubServ07	Too many public servants are selfish.	1.033	.051	.934	1.133	.719	
PubServ08	Public servants are political puppets.	.965	.053	.861	1.069	.629	
PubServ09	Public servants are lazy.	.897	.054	.79	1.003	.560	
PubServ10	Most public servants are helpful.	-.811	.048	-.904	-.718	.581	
PubServ11	Public servants are overpaid.	1.043	.059	.927	1.16	.603	
PubServ12	Public servants are power-hungry.	1.02	.054	.914	1.127	.657	
PubServ13	<i>(Public servants are altruistic.)</i>						<i>Deleted in Step 2 (low consistency)</i>
PubServ14	Public servants are accessible.	-.664	.051	-.764	-.564	.400	

PubServ15	Public servants are role models.	-.616	.054	-.722	-.51	.325
Politician						
Pol01	Politicians are selfish.	1.000 ^b		1.000	1.000	.784
Pol02	(Politicians are overpaid.)				Deleted in Step 2 (high social desirability)	
Pol03	Politicians are greedy.	1.011	.042	.930	1.093	.822
Pol04	(Politicians are naïve.)				Deleted in Step 2 (low consistency)	
Pol05	(I think of politicians as very motivated people.)		Deleted in Step 2 (low consistency and high social desirability)			
Pol06	Politicians are altruistic.	-.412	.071	-.55	-.273	.100
Pol07	(Politicians talk too much and do too little.)				Deleted in Step 2 (high social desirability)	
Pol08	(Politicians are manipulative.)				Deleted in Step 2 (high social desirability)	
Pol09	(Politicians are disconnected from the people they serve.)				Deleted in Step 2 (high social desirability)	
Pol10	Politicians want to improve the world.	-.795	.06	-.912	-.678	.402
Pol11	Politicians are liars.	.948	.041	.867	1.029	.774
Pol12	(Politicians have easy jobs.)				Deleted in step 2 (low consistency)	
Pol13	Politicians are power-hungry.	.862	.046	.772	.953	.625
Pol14	(Politicians are very motivated people.)				Deleted in Step 2 (low consistency)	
Pol15	(Politicians only focus on the well-being of a small group of citizens.)				Deleted in Step 2 (high social desirability)	

CI: confidence interval

s.e.: Standard error

^a Factor loadings of the confirmatory factor analysis are reported, based on Sample 3; i.e. without the items that were deleted in Step 2 (see comments column).

^b Reference loadings (specified to be '1')