Testing the Measurement Scale of Public Service Motivation in Korea

1. Testing the Structure of Public Service Motivation in Korea

An earlier condensed version of this manuscript was submitted to a referred journal.

2. Revising Perry's Measurement Scale of Public Service Motivation

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Sangmook Kim

Professor of Public Administration, Seoul National University of Technology
Seoul, Republic of Korea

Address
Dr. Sangmook Kim
Department of Public Administration
Seoul National University of Technology
172 Gongneung 2-Dong, Nowon-Gu
Seoul, 132-743 Republic of Korea
E-mail: smook@snut.ac.kr
Phone: +82 2 970 6495
Fax: +82 2 971 4647

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Testing the Structure of Public Service Motivation in Korea

ABSTRACT

Public service motivation (PSM) assumes that civil servants are characterized by an ethic to serve the public. In this journal, Perry (1996) identified a multi-dimensional scale to measure PSM, which has four components: attraction to policy-making, commitment to public interest, compassion, and self-sacrifice. But there is little research on the generalizability and applicability of the dimensions and scale of PSM in the other countries. The present study tests whether the structure of PSM observed in the United States by Perry (1996) can be generalized to Korea. Two independent samples (n_1 = 294 and n_2 = 290) are used for the scale validation. The statistical analysis applied confirmatory factor analysis (CFA) using *Amos 5.0*. It was found that the four-factor structure of PSM can be generalized in the Korean context but in the second-order model the factor of attraction to policy-making (APM) is doubtful whether it is indeed a valid dimension of PSM. Several reasons for this are discussed: In the Korean context, which differs from the United States, the rational motive might not be related to PSM; the rational motive itself is not part of PSM; the items of APM might not be appropriate to represent a rational base of PSM; and the negatively-worded items are not appropriate to assess APM.

It is generally believed that many public employees are motivated by a sense of service not found among private employees (Houston 2000; Perry and Wise 1990). They are seen as motivated by a concern for the community and a desire to serve the public interest, and are more likely to be characterized by an ethic that prioritizes intrinsic rewards over extrinsic rewards (Crewson 1997). The concept of public service motivation (PSM) is used to explain the difference between public and private employees (Perry 1996; Perry and Wise 1990).

In recent years a significant amount of research has examined the topic of PSM. The primary focus of the recent studies on PSM has been on identifying its nature and asking if it is characteristic of civil servants (Houston 2006). However, the measure of PSM is not fully examined. In this journal, Perry (1996) identified a multi-dimensional scale to measure PSM,

which has four components: attraction to policy-making, commitment to public interest, compassion, and self-sacrifice. Perry's measurement scale may be considered as representing the generally accepted model of PSM within the United States (Vandenabeele, Hondeghem, Maesschalck, and Depré 2004). But there is little research on the generalizability and applicability of the dimensions and scale of PSM in the other countries. National culture might influence the construct of PSM as found in North American studies. It is an empirical question whether it is possible to measure PSM in a different cultural context using the same approach.

Assessing the applicability of frameworks developed in one country to other countries is an important step in establishing the generalizability of PSM theories. A major concern for using a scale developed in another country is its validity across societies (Hui, Lee, and Rousseau 2004). The present study tests whether the structure of PSM observed in the United States by Perry (1996) can be generalized to Korea. The purpose of this empirical investigation is to explore the content and factor structure of PSM in the Korean context and to cross-validate Perry's (1996) scale. Two independent samples (n_1 = 294 and n_2 = 290) are used for the scale validation.

Public Service Motivation

PSM assumes that civil servants are characterized by an ethic to serve the public. They are committed to the public interest, and characterized by an ethic built on benevolence, a life in service of others, and a desire to affect the society (Houston 2006). PSM provides a useful basis for understanding public employee motivation (Perry 2000). According to Perry and Wise (1990, 368), PSM is defined as "an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations." Brewer and Selden (1998, 417) describe it as "the motivational force that induces individuals to perform meaningful public service." Rainey and Steinbauer (1999, 23) define it as "a general altruistic motivation to serve the interests of a community of people, a state, a nation or mankind." Recently Vandenabeele,

scheepers, and Hondeghem (2006, 15) define it as "the belief, values and attitudes that go beyond self-interest or organizational interest, that concern the interest of a larger political entity and that induce, through public interaction, motivation for targeted action." Even though the definitions of PSM itself are slightly different according to the authors, a commitment to the public interest, service to others, and self-sacrifice underlie an understanding of PSM (Houston 2006).

Perry and Wise (1990) formulated three propositions: (a) The greater an individual's public sector motivation, the more likely it is that the individual will seek membership in a public organization. (b) In public organizations, public sector motivation is positively related to performance. (c) Public organizations that attract members with high levels of public sector motivation are likely to be less dependent on utilitarian incentives to manage individual performance effectively.

PSM pertains to government employees. Public employees not only place a higher value on helping others, serving society and the public interest, and performing work that is worthwhile to society but also rank intrinsic rewards higher in importance than private sector employees (Crewson, 1997; Houston, 2000; Rainey 1982; Wittmer 1991). Crewson (1997) found that public-sector employees rate a feeling of accomplishment and performing work helpful to society and to others as more important job characteristics than do private-sector employees. Naff and Crum (1999) found a significant relationship between PSM and federal employees' job satisfaction, performance, intention to remain in the government, and support for the government's reinvention efforts. Houston (2000) showed that PSM does exist, and that public employees are more likely to place a higher value on the intrinsic reward of work that is important and provides a feeling of accomplishment. PSM is a modestly important predictor of organizational performance in testing a comprehensive model (Brewer and Selden, 2000). Brewer (2003) found that public employees score higher on attitudinal items related to social trust, altruism, equality, tolerance, and humanitarianism, and that they are more civically active

as they perform more than one-third more civic activities than other citizens. Lee (2005) found that there is a statistically significant difference between public and private employees in terms of PSM using Korean cases and that the higher PSM among public employees is positively related to higher performance level. Houston (2006) found that, using data from the 2002 General Social Survey, government employees are more likely to volunteer for charity and to donate blood than for-profit employees are, and that PSM is more prominent in public service than in private organizations.

PSM has rational, norm-based, and affective bases (Perry and Wise 1990). Rational motives are grounded in individual utility maximization, norm-based motives are grounded in a desire to pursue the common good and further the public interest, and affective motives are grounded in human emotion. A variety of rational, norm-based, and affective motives appear to be primarily or exclusively associated with public service. Rational motives are participation in the process of policy formulation, commitment to a public program because of personal identification, and advocacy for a special or private interest. Norm-based motives are a desire to serve the public interest, loyalty to duty and to the government as a whole, and social equity. Affective motives are commitment to a program from a genuine conviction about its social importance, and patriotism of benevolence. Perry and Wise (1990) describe these motives as psychological deficiencies or needs which can be satisfied by working in public institutions and organizations.

A variety of rational, norm-based, and affective motives appear to be primarily or exclusively associated with public service. Perry (1996) identified four empirical components of the PSM construct as attraction to public policy making, compassion, commitment to the public interest, and self-sacrifice. Three of the subscales map directly to the motivational foundations (Perry 1996; 2000). Attraction to public policy making coincides with rational choice processes, commitment to public interest with normative processes, and compassion with affective processes. The outcome of Perry's study (1996) was the development of a list of 24 items

measuring four subscales of PSM.

Recently, the components of PSM have been analyzed. Brewer, Selden, and Facer (2000) found that there are four different conceptions of PSM: Samaritans, communitarians, patriots, and humanitarians. The primary motives common to all of these are serving the public, making a difference in society, and ensuring individual and social equity but an interest in politics and policymaking is not a characteristic of any of these conceptions of PSM. After reviewing PSM in comparative perspective, Vandenabeele et al. (2004) concluded that PSM is a universal concept and all four dimensions of Perry (1996) can be found when describing the French and Dutch variants. Choi (2004) examined the relationship between PSM and ethical behavior, and suggested that only self-sacrifice in PSM is one of the critical factors that influence the ethical reasoning level of public servants in the United States. Lee (2005) found that, among Korean public employees, the component of attraction to policy making did not affect performance levels, but the other three components did. Thus, it is meaningful to empirically explore the four components of PSM in different cultural contexts.

The Korean Context

Korean culture is deeply rooted in Confucian values and ideals, and this culture has heavily influenced Korean government and Korean attitudes toward government (Ro, Frederickson and Hwang 1997). In the Confucian-oriented society, the Korean people have thought of themselves "as part of an organic whole that includes human society and the world around it, hierarchically arranged, related in a family-like pattern with eternally ordained responsibilities for everyone" (Macdonald 1996, 13). The people have been inclined to respect and honor government officials as members of a class possessing superior benevolence, wisdom, and administrative ability and therefore entitled to special status. For centuries the most honored profession in Korea was government service. Even though the civil service has lost some of its earlier prestige, partly because financially rewarding jobs have been more plentiful in private industry and commerce,

the profession of civil service is still one of the highest callings in Korea.

Korea has traditionally had the strong characteristics of a career civil service system, with a closed system in recruiting and rank-in-person system. Its origin dates back to the Kingdom of Unified Shilla era about 1,200 years ago (Kim 2006). The government rank-in-person is composed of nine grades, from Grade 9 to Grade 1 (the lower the number, the higher the position), and new entrance through the open competition applies to only three kinds of grades: Grade 5, 7 and 9. Once civil servants are appointed, they are supposed to have life-long job security and periodic promotions under this system. It is hard to enter the higher grades directly from the outside. Given the high level of job security and social reputation of government employees, the open competitive exams for civil service are highly competitive. Anyone who wants to be a civil servant is eligible for the exam, regardless of academic background, previous career, gender, or social standing. The exam result is the only criterion to determine who will work for the government. The average competitive rate in 2005 was 81 applicants for every position (81:1) (Civil Service Commission 2005). The civil service in Korea is divided into national and local civil service but the local government follows the general framework of the national civil service system.

Korea and the United States represent substantially different cultures. According to Hofstede (1991), Korea is categorized as a collectivistic and feminine society, with a high level of power distance and uncertainty avoidance, while the United States is viewed as an individualistic and masculine society, with a low level of power distance and uncertainty avoidance. Among the four dimensions, collectivism is representatively discussed when compared with American culture (Riordan and Vandenberg 1994). A recent empirical analysis on the cultural influences on the Korean government showed that cultural traits such as Confucian ethics and collectivism may affect public employees' whistle-blowing intentions in degree and direction (Park, Rehg, and Lee 2005).

Therefore, one can expect that the structure of PSM in Korea is influenced by

Confucian values, collectivist culture, and the high prestige of the public service. The Korean civil servants have been commanded to devote themselves to national development, and dedicate themselves to prove their professional integrity which has been built by Confucian culture. They are asked to sacrifice their personal interest for public good. One may expect that the normative and affective motives will be more prominently related to PSM than the rational motive, and the items related to Confucian values and collectivistic culture will be more valid measures of the dimensions.

Method

Samples

Two independent samples of civil servants were used in the study (n_1 = 294 and n_2 = 290). Data from the first study were used for scale validation and reduction and for establishing the optimal factor structure of PSM in the Korean context. Data from the second study were used to cross-validate the factor structure derived from the first study. Both samples were used for testing second-order structure of PSM scale.

The first survey was conducted in January, 2004. Five central government ministries and agencies and three upper-level local governments were randomly selected, and 350 permanent full-time civil servants were selected by stratified sampling. The strata used for this sampling were grade and gender. The participants were given surveys to complete during regular working hours; 315 surveys were returned, yielding a response rate of 90.0 percent. To create a data file for statistical analysis, the 21 cases with missing data for any of the PSM indicators were deleted, and 294 cases were retained. Among the respondents, 179 were from the central government and 115 were from the upper-level local governments (provinces and metropolitan cities). 80.5 percent were men and 19.5 percent were women. The positions they held in their respective organizations included general staff (74.2 percent) and management (25.8 percent).

The second survey was conducted in October, 2004. The questionnaires were distributed to 350 full-time civil servants, selected by stratified sampling, in Seoul Metropolitan Government. The strata used for this sampling were organizational unit (department), grade and gender. 297 surveys were returned, yielding a response rate of 84.9 percent. Deleting 7 cases with missing data left a total of 290 cases. Among the respondents, 216 (74.5 percent) were men; 73 (25.2 percent) were women, and one did not answer. The positions included general staff (87.6 percent) and management (12.4 percent).

Measures

To increase the accuracy of the response, each survey was distributed with a cover sheet guaranteeing anonymity. PSM was measured with Perry's (1996) 24-item scale: 3 items for the subscale of attraction to policy making (APM), 5 items of commitment to the public interest (CPI), 8 items of compassion (COM), and 8 for self-sacrifice (SS). To assure equivalence of the measures in the Korean and the English versions, all the scales used in this study were translated into Korean, and the researchers and public managers examined the questionnaires to ensure that the items were interpretable in Korean. All of the scales were responded to on a 5-point Likert type scale (1 = strong disagreement, 5 = strong agreement).

Analyses

The statistical analysis applied confirmatory factor analysis (CFA) using *Amos 5.0* (Arbuckle 2003) with the maximum likelihood estimation method. CFA was used to assess the fit of the data to the hypothesized measurement model. Exploratory factor analysis (EFA) may be appropriate for scale development, but CFA would be preferred where measurement models have a well-developed underlying theory for hypothesized patterns of loadings.

For model fit assessment, both inferential χ^2 test and a group of descriptive goodness-of-fit indices were consulted. Lower values of χ^2 indicate a better fit and should be non-

significant, but for large sample sizes, this statistic may lead to rejection of a model with good a fit. Models with many variables and degrees of freedom will have significant chi-squares. Thus chi-square needs to be adjusted by the degrees of freedom to assess model fit. This is the normed chi-square measure (χ^2/df) for which values between 1.0 and 5.0 are considered to fall within the level of acceptance (Schumacker and Lomax 1998). Several widely used descriptive fit indices were also used for assessing model fit, such as comparative fit index (CFI), goodness-of-fit index (GFI), incremental fit index (IFI), and the root mean square error of approximation (RMSEA). While there are no specific guidelines for assessing the fit of a model, in general, the larger the values of CFI, GFI, and IFI, and the smaller the value of RMSEA, the better fit the model (Bollen 1989). The model achieves an acceptable fit to the data when CFI, GFI, and IFI equal or exceed .90, and RMSEA values fall below .08 (Byrne 2001; Kline 2005; Vandenberg and Lance 2000).

As Anderson and Gerbing (1988) pointed out, initially specified measurement models almost invariably fail to provide acceptable fit; the models may be modified and tested again using the same data. After acceptable fit has been achieved with a series of respecifications, the next step in progression would be to cross-validate the final model on another sample. All modifications to the original model were performed only in Study 1 (n_1 = 294), and an exclusively confirmatory approach was followed in the second study (n_2 = 290).

Results

Study 1 (n_1 = 294)

The four-correlated-factor model suggested by Perry (1996) was tested using CFA. The CFA model in the first study hypothesized a priori that (1) responses to the 24-item PSM scale could be explained by four factors, (2) each item would have a nonzero loading on the PSM factor it was designed to measure and zero loadings on all other factors, (3) the four factors would be correlated, and (4) measurement error terms would be uncorrelated (Byrne 2001).

The resulting CFA for Sample 1 suggested that the four-correlated-factor model was not a good fit to the data, χ^2 (df = 246) = 697.9, p < .001; χ^2 /df =2.837; CFI = .768; GFI = .824; IFI = .771; RMSEA = .079, because the three fit indices were below the .90 benchmark typically used for acceptable fit. The GFI in Perry's (1996) 24-items four-dimension model was also less than .90. The descriptive statistics, reliabilities, and standardized factor loadings are presented in Table 1.

The reliability coefficient (Cronbach's α) for the 24-item PSM scale was .83, and the coefficients for the four subscales ranged from .62 to .74. In Perry's (1996) findings, the reliability coefficient for the 24-item scale was .90, and those for the four subscales ranged from .69 to .74. The coefficient alphas of this analysis are lower than Perry's but acceptable. In Perry's (1996) reports, the factor loadings ranged from .39 to .78, and those in 14 items were greater than .50. But in this sample, the factor loadings ranged from .178 to .776 but those in 16 items were greater than .50. The items having lower factor loadings were mostly negatively-worded items or were thought to be less related with Confucian values and collectivistic culture.

[Table 1 about here]

Given the disconfirmation of the initial model, an effort was made to estimate an alternative model (Anderson and Gerbing 1988; Perry 1996). Using the factor loading as a criterion, the items with lowest factor loading in each subscale were deleted, and a CFA model with the remaining items was tested again and again until it achieved an acceptable fit to the data. The outcome of this item-reducing process was a 14-item scale of four factors: The three items of APM are the same as those in Perry's (1996) scale; Two community-related items of CPI are deleted; The three negatively-worded items and an item related to social programs are deleted from COM; and the four items emphasizing contribution for society are selected in SS.

The reliability coefficient for the 14-item PSM scale in Sample 1 was .79, and the

coefficients for the four subscales ranged from .62 to .74. I proceeded to test the four-correlated factor model with 14 items, and the resulting CFA showed that it had a good fit to the data, χ^2 (df = 71) = 178.4, $p < .001$; χ^2 /df =2.513; CFI = .910; GFI = .916; IFI = .911; RMSEA = .072. The resulting factor structure showed a clean four-factor structure with all items loading significantly onto their a priori dimension. The results also provided support for convergent validity as all factor loadings were statistically significant with critical t values ranging from 4.976 to 10.914 ($p < .001$) and the standardized factor loadings values ranging from .466 to .774. The correlation estimates between the two factors ranged from -.013 to .806 and the confidence intervals (± 2 standard errors) around the correlation estimate between the two factors didn't include 1.00, supporting the discriminate validity of this four-factor model (Anderson and Gerbing 1988). The standardized factor loadings of items and inter correlations among the latent factors of the 14-item PSM scale are shown in Table 2.

[Table 2 about here]

Study 2 (n_2 = 290)

After performing the CFA on Sample 1, I used the four-factor 14 items identified in Sample 1 as a basis for conducting a CFA in Sample 2. If the CFA with a four-factor structure yields an acceptable fit in Sample 2, it indicates the presence of four distinguishable dimensions of PSM in Korea. The reliability coefficient for the 14-item PSM scale in Sample 2 was .76, and the coefficients for the four subscales ranged from .60 to .74. The resulting CFA showed that the four-correlated factor structure had a good fit to the data, χ^2 (df = 71) = 159.9, $p < .001$; χ^2 /df =2.252; CFI = .911; GFI = .923; IFI = .913; RMSEA = .066. All standardized loadings were statistically significant, providing support for convergent validity, and latent factor correlations provided support for discriminate validity. Thus, the results of CFA on Samples 1 and 2 indicated the presence of four distinct dimensions of PSM in Korea.

[Table 3 about here]

Testing second-order model

The good fit of the first-order model is a prerequisite to the tenability of the second-order model of PSM, which is nested within the first-order model. PSM is conceived as a superordinate multidimensional construct because it represents a general concept that is manifested by specific dimensions (Edwards 2001). Multidimensional constructs and their dimensions are better treated as latent variables in structural equation models. A superordinate construct is best viewed as a second-order factor with its dimensions as first-order factors. We can expect that PSM is presumed to be a second-order latent construct composed of the four latent dimensions: attraction to public policy making (APM), commitment to the public interest (CPI), compassion (COM), and self-sacrifice (SS). The second-order model of PSM uses the four first-order factors as indicators of one second-order factor (PSM), giving degrees of freedom. If the model is correct theoretically, it should be able to explain the six covariances between the four factors with only four parameters (Bratt 2005). Second-order CFA would be appropriate to test the structure of the PSM construct because it assesses the loading of items on their first-order latent construct as well as the loading of the first-order constructs on the second-order latent construct (Boudrias, Gaudreau, and Laschinger 2004). Unfortunately, Perry (1996) did not verify the second-order latent structure of PSM.

The second-order CFA model was tested using Samples 1 and 2. Using Sample 1, the resulting CFA showed that the second-order four-factor model had a good fit to the data, χ^2 (df = 73) = 181.3, $p < .001$; χ^2/df =2.484; CFI = .909; GFI = .915; IFI = .910; RMSEA = .071, and thus provided adequate support for the existence of the second-order structure of PSM. Using Sample 2, the resulting CFA showed that the second-order four-factor model had a good fit to the data, χ^2 (df = 73) = 161.7, $p < .001$; χ^2/df =2.214; CFI = .911; GFI = .923; IFI = .913;

RMSEA = .065. Thus the second-order model of PSM was confirmed in the Korean context. A pictorial representation of these second-order models is shown in Figure 1.

[Figure 1 about here]

As shown in Figure 1, the standardized second-order factor loadings of CPI, COM and SS ranged from .803 to .991 in Sample 1, and from .697 to 802 in Sample 2; the paths from the second-order factor of PSM to the three first-order factors, except the dimension of APM, were all significant. However, the APM loading on the PSM higher-order factor was rather problematic. It had a standardized loading of .056 in Sample 1, and of .297 ($p < .01$) in Sample 2. The square of the standardized second-order factor loading is equal to the variance of the first-order factor that can be explained by the second-order factor (Cheung 2000). The factor of APM obtained lowest second-order factor loading. This implies that this factor was least influenced by the second-order factor of PSM. The dimension of APM was least related to the other three factors (Table 2 and Table 3), and this is due to its low loading on the second-factor. Thus the APM dimension was not satisfactorily represented by the PSM second-order construct.

Discussion

The results show that the four-factor structure of PSM can be generalized in the Korean context but the APM dimension is doubtful as to whether it is indeed a valid dimension of PSM. There are several ways to explain why it happened. Firstly, one could explain that in the Korean context, which differs from the United States, the rational motive might not be related to PSM. The dimension of APM represents a rational motive. Perry and Wise (1990) explained it as that individuals may be drawn to government or pursue particular courses of action within government because of their belief that their choices will facilitate the interests of special groups, and that one motive prevalent in pluralistic societies is an individual's conscious or

unconscious advocacy for special interests. But unlike the United States, the Korean society is very homogeneous; the Koreans share a sense of ethnic identity, a language intelligible everywhere in the country, and a common culture (Macdonald 1996). Under the influence of Confucian virtues and collectivistic culture, Koreans are inclined to become civil servants to serve the public and enhance the public interest generally, not specific interests. Thus the normative and affective motives will be more prominently related to PSM than the rational motive.

Secondly, it might be reasonable that the rational motive itself is not part of PSM. The rational choice approach to motivation is based on an assumption of utility-maximizing behavior (Shamir 1991). A rational actor calculates costs and benefits associated with alternative actions, and then chooses the alternative that maximizes expected values (Perry 1996). However, PSM suggests that public employees are more likely to possess attitudes that are altruistic and to be motivated by a strong desire to perform public, community, and social service (Brewer 2003; Houston 2006). The attitudinal and behavioral implications of PSM thus could not be calculated by a rational choice formula or as a function of self-interest. In Perry's (1996) study, the correlations between APM and other subscales (.28 ~ .38) were lower than those between the other subscales (.58 ~ .89). The same results are shown in this study. Perry (1997) found that professional identification, as an antecedent of PSM, is negatively related to APM but positively associated with COM and SS. Brewer et al. (2000) found that politics and policy making are not driving motives involved in performing public service. The civil servants are more inclined to abandon self-interests in order to achieve others' welfare or the public interest (DiIulio 1994), and thus PSM needs to be more focused on normative and affective motives, deleting the dimension of rational motive.

Thirdly, it might be reasonable that the items of APM are not appropriate to represent a rational base of PSM.[1] The items are not asking whether the respondents are attracted to public policy-making but asking whether they like or dislike politics, politicians and political

phenomena. These items are not appropriate to measure the essential components of rational motive. Thus it is necessary to develop the more valid measures of APM, reflecting the motives such as participation in the process of policy formulation, commitment to a public program because of personal identification with it, and advocacy for special or private interests (Perry and Wise 1990).

Fourthly, one could say that the negatively worded items are not appropriate to adequately assess the perception and feeling of respondents, and thus it is necessary to modify Perry's (1996) instrument to assess APM more adequately. Modifying these items and adding some more positively worded items would improve the scale. Perry (1996, 20) also mentioned this problem:

> Because the current subscale is composed entirely of negatively worded items, it confounds whether the subscale taps the attraction to policy-making dimension or whether it also may tap cynicism or negative affect toward politics. Thus the addition of positively worded items would be desirable.

Conclusion

The purpose of the present study was to examine whether the structure of PSM observed in the United States by Perry (1996) can be generalized to Korea. The initial model with Perry's (1996) 24-items was not a good fit to the present data, and so through the process of modifications a 14-item scale of four factors was developed. We found that the four-factor structure of PSM can be generalized in the Korean context, but in the second-order model the APM dimension is doubtful as to whether it is indeed a valid dimension of PSM. It seems that the three-factor model with deleting the dimension of APM is more appropriate to measure PSM. There are several ways to explain why it happens: In the Korean context, which differs from the United States, the rational motive might not be related to PSM; the rational motive itself is not part of PSM. The items of APM might not be appropriate to represent a rational base of PSM; and the negatively worded items are not appropriate to assess APM. However, this study alone

is insufficient to show which explanation is more reasonable. Further studies are needed to figure out whether APM should be included as an essential subscale of PSM or not.

This study used a 14-item scale instead of 24 items for achieving a better fit of the model. Shorter scales are generally preferred in studies so that respondents' workload is reduced. Nevertheless, it is necessary to establish that the shorter version is a valid and reliable measure of the construct that the longer scale measures (DeVellis 1991; Epitropaki and Martin 2004). The 14-item scale was shown as a valid measure, but the reliability coefficients of some subscales were not good enough according to Nunnally's (1978) recommended level of .70. Future studies need to pay more attention to expression and translation of the items.

PSM is an important universal concept. The existence of PSM has significant implications in the field of public administration, and thus the scale to measure PSM needs to be fully explored and examined. Further validation studies on the PSM scale should be done in different contexts and in different samples. Minor adjustments on the PSM items may be done in order to improve the fit of the model in some contexts. Future research should also investigate whether the rational motive is really one of the analytically distinct bases of PSM, as well as attempting to develop more adequate indicators of APM.

Footnote

1. An anonymous reviewer suggested that the APM items have little face validity as indicators of APM itself, and of a rational motivational base.

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Table 1

Descriptive statistics and standardized estimates of the 24-item PSM scale (Sample 1)

Factors and items	Mean	S.D.	Factor loading	Alpha
ATTRACTION TO POLICY MAKING				
PSM1: Politics is a dirty word. (R)	2.95	.881	.460	
PSM2: The give and take of public policy making doesn't appeal to me. (R)	2.94	.846	.601	.62
PSM3: I don't care much for politicians. (R)	2.67	.969	.739	
COMMITMENT TO THE PUBLIC INTEREST				
PSM4: It is hard for me to get intensely interested in what is going on in my community. (R)	3.24	.862	.317	
PSM5: I unselfishly contribute to my community	3.17	.780	.390	.68
PSM6: I consider public service my civic duty.	3.82	.666	.722	
PSM7: Meaningful public service is very important to me.	3.90	.598	.776	
PSM8: I would prefer seeing public officials do what is best for the whole community even if it harmed my interests.	3.96	.707	.650	
COMPASSION				
PSM9: It is difficult for me to contain my feelings when I see people in distress.	4.00	.563	.762	
PSM10: Most social programs are too vital to do without.	3.75	.750	.431	
PSM11: I am often reminded by daily events how dependent we are on one another.	3.85	.649	.702	
PSM12: I am rarely moved by the plight of the underprivileged. (R)	3.80	.763	.627	
PSM13: To me, patriotism includes seeing to the welfare of others.	3.68	.617	.567	.73
PSM14: I have little compassion for people in need who are unwilling to take the first step to help themselves. (R)	2.89	.850	.178	
PSM15: There are few public programs that I wholeheartedly support. (R)	3.19	.737	.302	
PSM16: I seldom think about the welfare of people I don't know personally. (R)	3.54	.698	.566	
SELF-SACRIFICE				
PSM17: Doing well financially is definitely more important to me than doing good deeds. (R)	3.45	.785	.269	
PSM18: Much of what I do is for a cause bigger than myself.	3.42	.800	.291	
PSM19: Serving other citizens would give me a good feeling even if no one paid me for it.	3.74	.650	.633	
PSM20: Making a difference in society means more to me than personal achievements.	3.48	.733	.607	.74
PSM21: I think people should give back to society more than they get from it.	3.50	.728	.535	
PSM22: I am prepared to make enormous sacrifices for the good of society.	3.33	.727	.715	
PSM23: I am one of those rare people who would risk personal loss to help someone else.	2.93	.738	.554	
PSM24: I believe in putting duty before self.	3.46	.713	.646	

Note. (R): reversed coding. All factor loadings are significant at $p < .001$.

Table 2

Standardized factor loadings and correlations for the 14-item PSM scale (Sample 1)

Factors and items	Factor loading	Alpha
ATTRACTION TO POLICY MAKING		
PSM1: Politics is a dirty word. (R)	.466	.62
PSM2: The give and take of public policy making doesn't appeal to me. (R)	.606	
PSM3: I don't care much for politicians. (R)	.729	
COMMITMENT TO THE PUBLIC INTEREST		
PSM6: I consider public service my civic duty.	.683	.74
PSM7: Meaningful public service is very important to me.	.773	
PSM8: I would prefer seeing public officials do what is best for the whole community even if it harmed my interests.	.684	
COMPASSION		
PSM9: It is difficult for me to contain my feelings when I see people in distress.	.774	.74
PSM11: I am often reminded by daily events how dependent we are on one another.	.732	
PSM12: I am rarely moved by the plight of the underprivileged. (R)	.587	
PSM13: To me, patriotism includes seeing to the welfare of others.	.535	
SELF-SACRIFICE		
PSM19: Serving other citizens would give me a good feeling even if no one paid me for it.	.688	.73
PSM20: Making a difference in society means more to me than personal achievements.	.564	
PSM22: I am prepared to make enormous sacrifices for the good of society.	.659	
PSM24: I believe in putting duty before self.	.638	

Inter-factor correlations

	1	2	3
1. Attraction to policy making			
2. Commitment to the public interest	.054		
3. Compassion	-.013	.806***	
4. Self-sacrifice	.128	.794***	.651***

Note. (R): reversed coding. All factor loadings are significant at $p < .001$. *** $p < .001$.

Table 3

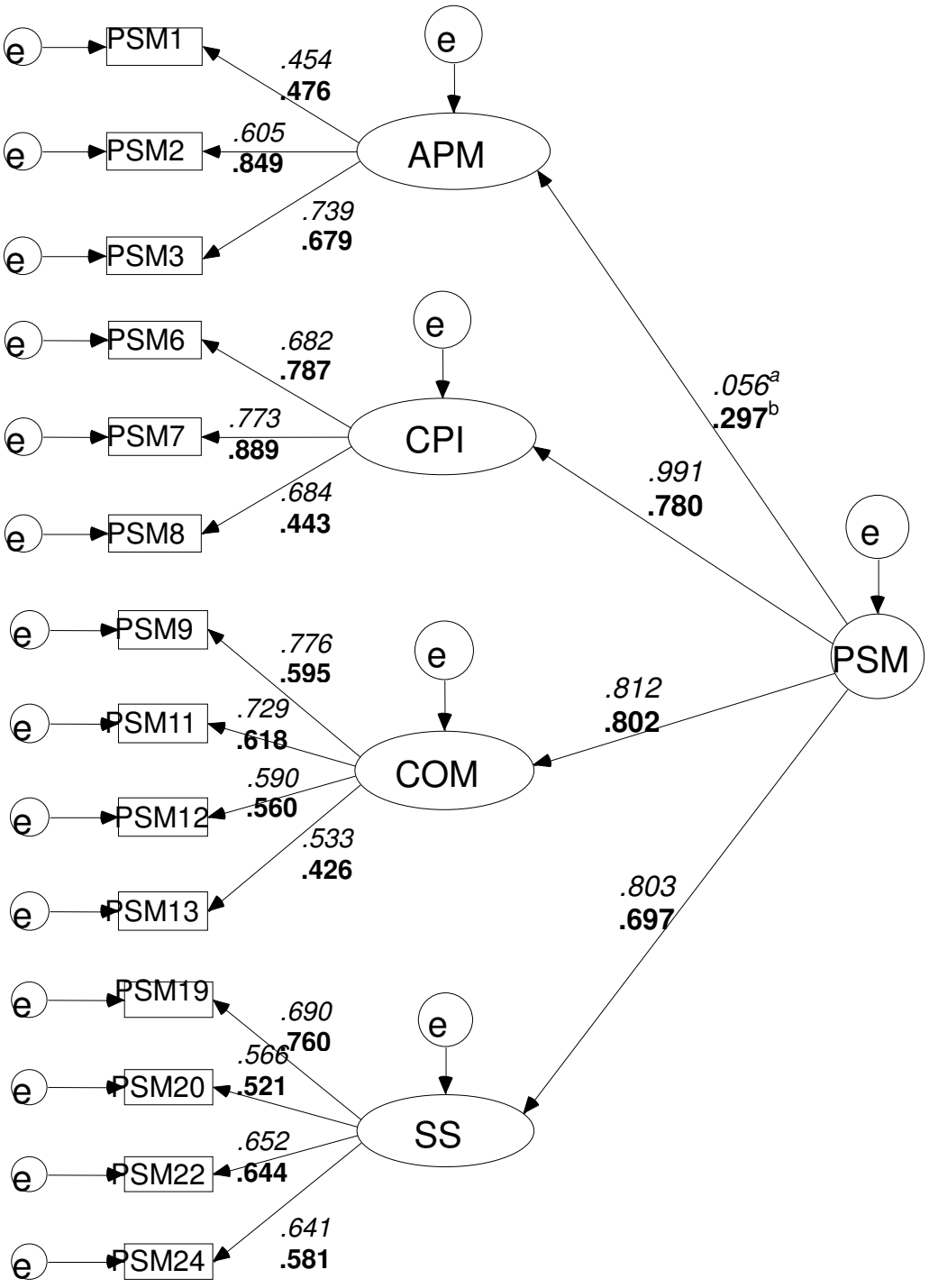
Standardized factor loadings and correlations for the 14-item PSM scale (Sample 2)

Factors and items	mean	S.D.	Factor loading	Alpha
ATTRACTION TO POLICY MAKING				
PSM1	2.97	.872	.478	.71
PSM2	2.96	.942	.855	
PSM3	2.79	1.019	.673	
COMMITMENT TO THE PUBLIC INTEREST				
PSM6	3.70	.653	.788	.74
PSM7	3.74	.609	.887	
PSM8	3.80	.712	.444	
COMPASSION				
PSM9	3.99	.573	.594	.60
PSM11	3.84	.570	.617	
PSM12	3.78	.796	.561	
PSM13	3.59	.711	.428	
SELF-SACRIFICE				
PSM19	3.79	.654	.766	.72
PSM20	3.40	.806	.518	
PSM22	3.24	.727	.639	
PSM24	3.46	.716	.581	

Inter-factor correlations			
	1	2	3
1. Attraction to policy making			
2. Commitment to the public interest	.252**		
3. Compassion	.269**	.615***	
4. Self-sacrifice	.142	.550***	.571***

Note. (R): reversed coding. All factor loadings are significant at $p < .001$. ** $p < .01$, *** $p < .001$.

Figure 1: Second-order four-factor model of PSM



Note. Standardized factor loadings of PSM model for Sample 1 (italic characters) and Sample 2 (bold characters). APM = attraction to policy making, CPI = commitment to the public interest, COM = compassion, SS = self-sacrifice. All standardized factor loadings except ([a]) or ([b]) are significant at $p < .001$. [a] $p > .05$, [b] $p < .01$.

Revising Perry's Measurement Scale of Public Service Motivation

ABSTRACT

In this journal, Perry (1996) identified a 24-item multidimensional scale to measure public service motivation (PSM), which has four components: attraction to policy-making (APM), commitment to public interest, compassion, and self-sacrifice. But the measurement scale of PSM is not fully examined. Based on Perry's items, Kim (2006) produced a 14-item scale of four factors, and found that the four-factor structure of PSM can be generalized in the Korean context but in the second-order model the dimension of APM is doubtful because its factor loadings were too low. This study revises the questionable items of the APM dimension into more positive and relevant ones and tests whether the dimension of APM is a valid dimension. Survey data (n = 690) were used for the scale validation. The statistical analysis applied confirmatory factor analysis using *Amos 7.0*. The modification process, which generated a 12-item scale for four factors, was shown as a valid and reliable measure: the test results provided support for convergent validity as well as discriminant validity of the four-factor model and the reliability coefficients of all subscales were good enough. The APM dimension as well as the other dimensions was satisfactorily represented by the PSM second-order construct. The four-factor structure of PSM was confirmed.

Many public employees are assumed to be motivated by a sense of service not found among private employees (Houston 2000; Perry and Wise 1990). Public service motivation (PSM) refers to this type of altruistic motivation to serve the public. In this journal, Perry (1996) identified a multidimensional scale to measure PSM, which has four components: attraction to policy-making (APM), commitment to public interest (CPI), compassion (COM), and self-sacrifice (SS). Using the dimensions of Perry's (1996) scale, a significant amount of research has examined the antecedents and effects of PSM in recent years (Camilleri 2006; Castaing 2006; Choi 2004; DeHart-Davis, Marlowe, and Pandey 2006; Lee 2005; Moynihan and Pandey 2007; Perry 1997, 2000). However, the measurement scale of PSM is not fully examined. There is little research on the generalizability and applicability of the measurement scale of PSM.

Assessing the applicability of frameworks developed in one country to other countries is an important step in establishing the generalizability of PSM theories. Kim (2006) tested whether the structure of PSM observed in the United States by Perry (1996) can be generalized to Korea. Two independent samples of Korean civil servants were used for the scale validation.

It was found that the four-factor structure of PSM can be generalized in the Korean context but in the second-order model it is doubtful whether APM is indeed a valid dimension of PSM in Korea because its standardized factor loadings were too low. Several reasons for this were discussed; the most reasonable are that, 1) in Perry's (1996) scale, the items of APM might not be appropriate to represent a rational base of PSM and 2) the negatively worded items are not appropriate to assess APM.

Following Kim's (2006) study, this study focuses on the dimension of APM and the negatively worded items in Perry's (1996) scale. In this study the questionable items of Perry's scale will be revised into more positive and relevant statements representing that dimension. The purpose of this empirical investigation is to reconfirm whether the dimension of APM is a valid dimension of PSM. Survey data (n = 690) were used for the scale validation.

Dimensions and Measures of Public Service Motivation

PSM provides a useful basis for understanding public employee motivation (Perry 2000). According to Perry and Wise (1990, 368), PSM is defined as "an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations." PSM has rational, norm-based, and affective bases (Perry and Wise 1990). Rational motives are grounded in individual utility maximization; norm-based motives are grounded in a desire to pursue the common good and further the public interest; and affective motives are grounded in human emotion. A variety of rational, norm-based, and affective motives appear to be primarily or exclusively associated with public service. Rational motives are participation in the process of policy formulation, commitment to a public program because of personal identification, and advocacy for a special or private interest. Norm-based motives are a desire to serve the public interest, loyalty to duty and to the government as a whole, and social equity. Affective motives are commitment to a program from a genuine conviction about its social importance, and patriotism of benevolence. Perry and Wise (1990) describe these motives as psychological

deficiencies or needs that can be satisfied by working in public institutions and organizations.

Perry (1996) developed a measurement scale for PSM. The 40 survey items were devised to correspond to six dimensions of PSM: APM, CPI, civic duty, social justice, COM, and SS. Using data from a survey of 376 respondents from a variety of primarily public sector backgrounds, Perry identified four empirical components of the PSM construct as APM, COM, CPI, and SS. Three of the subscales map directly to the motivational foundations (Perry 1996, 2000). APM coincides with rational choice processes, CPI with normative processes, and COM with affective processes. The outcome of Perry's study was the development of a list of 24 items measuring four subscales of PSM. The coefficient alphas for the four subscales ranged from .69 to .74 and the factor loadings of the items ranged from .39 to .78, but the goodness-of-fit index (GFI) was below the .90 benchmark typically used for acceptable fit.

Recently, the components of PSM have been analyzed. Perry (1997) investigated several hypothesized antecedents of PSM with the same dimensions of his 1996 study, and suggested that an individual's PSM develops from exposure to a variety of experiences, some associated with childhood, some associated with religion, and some associated with professional life.

Brewer, Selden, and Facer (2000) found that there is not just one conception of PSM but are four; Samaritans, communitarians, patriots, and humanitarians. Samaritans are highly motivated to help other people. Communitarians are motivated by sentiments of civic duty and public service. Patriots act out of benevolence and concern for the public. Humanitarians are motivated by a desire for social justice. The primary motives common to all of these are serving the public, making a difference in society, and ensuring individual and social equity—but an interest in politics and policymaking is not a characteristic of any of these conceptions of PSM.

After reviewing PSM in comparative perspective, Vandenabeele, Hondeghem, Maesschalck, and Depré (2004) concluded that PSM is a universal concept and all four dimensions of Perry (1996) can be found when describing the French and Dutch variants,

Vandenabeele, Scheepers, and Hondeghem (2006) demonstrated the same conclusion when describing the British and German variants. They added that PSM consists not only of the dimensions introduced by Perry (1996) but also of several additional elements.

Using the CPI and SS dimensions of Perry's (1996) scale, Choi (2004) examined the relationship between PSM and ethical behavior, and suggested that only SS in PSM is one of the critical factors that influence the ethical reasoning level of public servants in the United States. Using Perry's (1996) 24-item scale, Lee (2005) found that among Korean public employees the component of APM did not affect performance level but the other three components did.

DeHart-Davis, Marlowe, and Pandey (2006) explored gender dimensions in the APM, COM, and CPI subscales of Perry's (1996) measure. The Cronbach's alphas for these subscales were 0.72, 0.55, and 0.68, respectively. In their study, data from a survey of 274 public managers in state health and human service agencies revealed that women scored higher on Perry's COM and AOM subscales, whereas no statistically significant gender differences were found on CPI. Using the same data and analyzing the APM and CPI dimensions of Perry's (1996) scale, Moynihan and Pandey (2007) showed that PSM is strongly and positively related to level of education, membership in professional organizations, hierarchical authority, and reform efforts; and red tape and length of organizational membership are negatively related to PSM.

Camilleri (2006) examined the relationships between organizational commitment and PSM, utilizing Perry's (1996) 24-item scale. The Cronbach's alphas for the four subscales ranged from 0.55 (APM) to 0.83 (SS). In the second-order confirmatory factor analysis (CFA) model (Camilleri 2006, 75), the factor loadings were 0.21 (APM), 0.63 (CPI), 0.60 (COM), and 0.80 (SS). Thus, the factor loading of the APM dimension on the PSM higher-order factor was markedly lower than for the others, and this dimension did not load meaningfully on the PSM second-order construct. In this study, a survey of 2,135 Maltese public officials indicated that organizational commitment strengthens PSM and affective commitment has a direct effect on all

the dimensions of PSM.

Using survey responses from 754 French civil servants, Castaing (2006) found that PSM is an important antecedent of affective commitment to the public organization. They measured PSM with four items to capture the dimension of CPI in Perry's (1996) scale. The Cronbach's alpha for this dimension was 0.65.

Even though many studies conducted both in the United States and in other countries have used the dimensions and items of Perry's (1996) scale, the measurement scale of PSM has not been thoroughly examined. Thus, it is meaningful to empirically explore again and confirm the four components of PSM.

The Previous Test and Second-Order Factor Model

In Kim's (2006) study, with the two independent samples (n_1 = 294 and n_2 = 290), the four-correlated-factor model suggested by Perry (1996) was tested using CFA. The initial model with Perry's (1996) 24 items was not a good fit to the data, and so through the process of model respecification a 14-item scale of four factors was developed. All modifications to the original model were performed only on the first study sample, and the new model was cross-validated on the second sample. The four-correlated-factor model with 14 items was tested, and the resulting CFA showed that it had a good fit to the data in both samples. Thus the presence of four distinct dimensions of PSM in Korea was indicated. However, one more step is necessary to confirm the validity of the model.

[Table 1 about here]

PSM is conceived as a superordinate multidimensional construct because it represents a general concept that is manifested by specific dimensions (Edwards 2001). Multidimensional constructs and their dimensions are better treated as latent variables in structural equation

models. A superordinate construct is best viewed as a second-order factor with its dimensions as first-order factors:

> Superordinate constructs are often operationalized by summing scores on their dimensions. Although this approach is widespread, it disregards measurement error and fails to capture differences in the relationships between the construct and its dimensions. These problems are avoided when a superordinate construct is specified as a first-order factor and dimension scores are treated as observed variables (Hanisch and Hulin 1991). However, this approach confounds random measurement error with dimension specificity (i.e., systematic variance in each dimension not captured by the superordinate construct) and ignores the relationships between each dimension and its measures. These limitations are overcome by second-order factor models that treat the superordinate construct as a second-order factor, its dimensions as first-order factors, and measures of the dimensions as observed variables (Edwards 2001: 146).

The second-order CFA model was tested using both samples. The results showed that the second-order four-factor model had a good fit to the data, and thus provided adequate support for the existence of the second-order structure of PSM in both cases. But the dimension of APM was problematic. The standardized factor loadings of CPI, COM and SS ranged from .803 to .991 in Sample 1, and from .697 to 802 in Sample 2; thus the three non-APM latent factors loaded highly and significantly on PSM. However, the APM loading on the PSM higher-order factor was .056 ($p > .05$) in Sample 1, and .297 ($p < .01$) in Sample 2. Thus the APM dimension did not load meaningfully on the PSM second-order construct in Korea. In Camilleri's (2006) study, using a survey of 2,135 Maltese public officials, the factor loading of APM was also too low (.21).

There are several possible explanations, but Kim's (2006) study alone is insufficient to show which is most reasonable. Further studies are needed to figure out whether the items of APM are appropriate to represent a rational base of PSM. This study is focusing on the two possibilities that the items of APM in Perry's (1996) scale might not be appropriate to represent a rational base of PSM and that the negatively worded items are not appropriate to assess APM. The present study tests Perry's measurement scale of PSM using revised items that are positively worded and more appropriate to represent the dimension of APM.

Method

Measures

Perry (1996) developed a list of 24 items measuring four subscales of PSM, and Kim (2006) reduced it to a 14-item scale and confirmed that the four-factor structure of PSM can be generalized in the Korean context. This study is based on the 14-item PSM scale. According to Kim (2006), the APM items in Perry's (1996) scale may be not appropriate to represent the rational base of PSM. The items are not asking whether the respondents are attracted to public policy-making but whether they like or dislike politics, politicians and political phenomena. More valid measures of APM would reflect such motives such as participation in the process of policy formulation, commitment to a public program because of personal identification with it, and advocacy for special or private interests (Perry and Wise 1990).

Kim (2006) also postulates that the negatively worded items may be not appropriate to adequately assess the perception and feeling of respondents. Modifying them to positively worded items would improve the scale. Perry (1996, 20) also mentioned this problem:

> Because the current subscale is composed entirely of negatively worded items, it confounds whether the subscale taps the attraction to policy-making dimension or whether it also may tap cynicism or negative affect toward politics. Thus the addition of positively worded items would be desirable.

Therefore, more desirable items would be positively worded and would more appropriately represent the rational base of PSM. The following three items for the dimension of APM are developed:

1. I am interested in making public programs which are beneficial for my country or the community I belong to.
2. Sharing my views on public policies with others is attractive to me.
3. Seeing people get benefits from the public program I have been deeply involved in brings me a great deal of satisfaction.

One item in the COM dimension is also negatively worded, so "I am rarely moved by the plight of the underprivileged" is changed to a positively worded sentence, "I feel sympathetic to the plight of the underprivileged." Thus PSM is measured with the positively

worded 14 items in this study: 3 items for the subscale of APM, 3 items of CPI, 4 items of COM, and 4 for SS.

All of the scales are responded to on a 5-point Likert-type scale (1 = strong disagreement, 5 = strong agreement). To increase the accuracy of the response, each survey was distributed with a cover sheet guaranteeing anonymity. To assure equivalence of the measures in the Korean and the English versions, all the scales used in this study were translated into Korean.

Sample

The survey was conducted in November, 2006. All permanent full-time public employees of Seocho City in Seoul Metropolitan City (N = 1,020) were given surveys to complete during regular working hours; 721 surveys were returned, yielding a response rate of 70.7%. To create a data file for statistical analysis, the 31 cases with missing data for any of the PSM indicators were deleted, and 690 cases were retained. Of the respondents, men were 63.1% and women were 36.9%. Turning to educational background, 62.0% had at least a bachelor's degree; 18.8% had a junior college diploma. Most (38.3%) were in their 30s in age; the next largest group (36.6%) was in their 40s. Over half (52.9%) of the respondents had worked for more than 10 years and fewer than 20 years in the civil service, and 23.3% had worked 20 years or more.

Analyses

The statistical analysis applies CFA using *Amos 7.0* (Arbuckle 2006) with the maximum likelihood estimation method. CFA is used to assess the fit of the data to the hypothesized measurement model. For model fit assessment, both inferential χ^2 test and a group of descriptive goodness-of-fit indices are consulted. Lower values of χ^2 indicate a better fit and should be nonsignificant, but for large sample sizes, this statistic may lead to rejection of a model with good fit. Models with many variables and degrees of freedom will have significant χ^2. Thus χ^2 needs to be adjusted by the degrees of freedom to assess model fit. This is the normed χ^2 measure (χ^2/df), for which values between 1.0 and 5.0 are considered to fall within the level of

acceptance (Schumacker and Lomax 1998). Several commonly used descriptive fit indices are also used for assessing model fit, such as comparative fit index (CFI), GFI, incremental fit index (IFI), and the root mean square error of approximation (RMSEA). While there are no specific guidelines for assessing the fit of a model, in general, the larger the values of CFI, GFI, and IFI, and the smaller the value of RMSEA, the better fitting the model (Bollen 1989). The model achieves an acceptable fit to the data when CFI, GFI, and IFI equal or exceed .90, and RMSEA values fall below .08 (Byrne 2001; Kline 2005; Vandenberg and Lance 2000).

The existence of a second-order factor is justified by examining the target coefficient (*T*) (Marsh and Hocevar 1985; Xia and Lee 2005). The t-coefficient is the ratio of the chi-square of the first-order model to the chi-square of the more restrictive model: T = χ^2 (first-order model)/ χ^2 (second-order model). The t-coefficient indicates the extent to which the second-order factor accounts for the variance among the first-order factors, and the goodness-of-fit of the second-order model is always worse than the corresponding first-order model. A high t-coefficient implies that the relationship among first-order factors is sufficiently captured by the higher-order factor, thus indicating the validity of a second-order model (Xia and Lee 2005).

Results

The four-correlated-factor model was tested using CFA, which hypothesized a priori that 1) responses to the 14-item PSM scale could be explained by four factors; 2) each item would have a nonzero loading on the PSM factor it was designed to measure and zero loadings on all other factors; 3) the four factors, consistent with the theory, would be correlated; and 4) measurement error terms would be uncorrelated (Byrne 2001).

The resulting CFA (n = 690) suggested that the four-correlated-factor model was not a good fit to the data, χ^2 (df = 71) = 400.6, p < .001; χ^2 /df =5.643; CFI = .894; GFI = .919; IFI = .895; RMSEA = .082, because the three fit indices were below the .90 or over the .08 benchmark typically used for acceptable fit. The reliabilities and standardized factor loadings

are presented in Table 2.

[Table 2 about here]

Given the disconfirmation of the initial model, an effort was made to estimate an alternative model (Anderson and Gerbing 1988; Perry 1996). Modification indices showed that two items, PSM 10 and PSM 11 were cross-loaded to the other factors. Deleting the two items generated a 12-item scale of four factors. The reliability coefficient for the 12-item PSM scale in Sample 1 was .84, and the coefficients for the four subscales ranged from .70 to .75, which were all above Nunnally's (1978) recommended level of .70. Thus the measures were reliable.

The four-correlated-factor model with 12 items was tested, and the resulting CFA showed that it had a good fit to the data, χ^2 (df = 48) = 164.1, $p < .001$; χ^2 /df =3.418; CFI = .955; GFI = .962; IFI = .955; RMSEA = .059. The resulting factor structure showed a clean four-factor structure with all items loading significantly onto their a priori dimension. The results also provided support for convergent validity as all factor loadings were statistically significant with critical t values ranging from 12.245 to 16.175 ($p < .001$) and the standardized factor loadings values ranging from .540 to .807. The correlation estimates between the two factors ranged from .355 to .713 and the confidence intervals (±2 standard errors) around the correlation estimate between the two factors didn't include 1.00, supporting the discriminant validity of this four-factor model (Anderson and Gerbing 1988). When the goodness of fit of the four-factor model was tested in comparison with a three-correlated-factor model merging CPI and COM which were most correlated, the four-correlated-factor model provided the more parsimonious fit to the data. The standardized factor loadings and interfactor correlations of the 12-item PSM scale are shown in Table 3.

[Table 3 about here]

The good fit of the first-order model is a prerequisite to the tenability of the second-order model of PSM, which is nested within the first-order model. We can expect that PSM is presumed to be a second-order latent construct composed of the four latent dimensions, APM, COM, CPI, and SS. The second-order model of PSM uses the four first-order factors as indicators of one second-order factor (PSM), giving degrees of freedom. If the model is correct theoretically, it should be able to explain the six covariances between the four factors with only four parameters (Bratt 2005). Second-order CFA would be appropriate to test the structure of the PSM construct because it assesses the loading of items on their first-order latent construct as well as the loading of the first-order constructs on the second-order latent construct (Boudrias, Gaudreau, and Laschinger 2004).

The resulting CFA showed that the second-order four-factor model had a good fit to the data, χ^2 (df = 50) = 242.9, $p < .001$; χ^2 /df =4.858; CFI = .925; GFI = .944; IFI = .926; RMSEA = .075, and thus provided adequate support for the existence of the second-order structure of PSM. The t-coefficient between the first-order model and the second-order model is .68, supporting that the second-order model explains a significant proportion of the covariation among first-order factors. The standardized second-order factor loadings of APM, CPI, COM and SS were .683, .855, .725, and .640, respectively, and all significant. Thus the APM dimension as well as the other dimensions was satisfactorily represented by the PSM second-order construct.

Discussion

Kim (2006) showed that, while the four-factor structure of PSM can be generalized in the Korean context, it is doubtful whether the APM dimension is indeed a valid dimension of PSM. Kim (2006) suggested several explanations. First, one could explain that in the Korean context, different from the United States, the rational motive might not be related to PSM. Second, it

might be reasonable that the rational motive itself is not part of PSM. Third, it might be reasonable that the items of APM are not appropriate to represent a rational base of PSM. Fourth, one could say that the negatively worded items are not appropriate to adequately assess the perception and feeling of respondents, and thus it is necessary to modify Perry's (1996) instrument to assess APM more adequately.

This study focused on the third and fourth possible reasons: the APM items were changed to more relevant ones and the negatively worded items were converted to positively worded ones. The test results showed that the reliability coefficients for the APM dimension were improved from .62 and .71 (Kim 2006) to .75, the interfactor correlation estimates were strong enough and statistically significant, and the standardized factor loadings of the APM dimension on PSM were increased from .056 and .297 (Kim 2006) to .683. Thus, with the revised items, the APM dimension as well as the other dimensions loaded significantly on the PSM second-order construct, and the results confirmed the four-factor structure of PSM can be generalized in the Korean context. Therefore, it was proved that the problems shown by Kim (2006) were caused mainly not by the nature of rational motive itself but by the items used to measure the APM dimension, and that the revised items are better for representing the rational base of PSM than the original items (Perry 1996). It may be more appropriate to use the revised 12-item measurement scale of PSM than the others.

Conclusion

The purpose of the present study was to confirm whether the dimension of APM is a valid dimension of PSM. In Kim's (2006) study, the initial model with Perry's (1996) 24 items was not a good fit to the data, so the 14-item scale of four factors was developed but in the second-order model the APM dimension was doubtful. In the present study the positively worded and more relevant items for the dimension of APM instead of Perry's (1996) items were used, and so the APM dimension as well as the other dimensions loaded significantly on the PSM second-

order construct and the results confirmed that the four-factor structure of PSM can be generalized. It provided the revised 12-item measurement scale of PSM.

Shorter scales are generally preferred in studies so that respondents' workload is reduced. Nevertheless, it is necessary to establish that the shorter version is a valid and reliable measure of the construct that the longer scale measures (DeVellis 1991; Epitropaki and Martin 2004). The revised 12-item scale was shown as a valid and reliable measure because the results provided support for convergent validity as well as discriminant validity of the four-factor model and the reliability coefficients of all subscales were good enough.

PSM is an important universal concept. The existence of PSM has significant implications in the field of public administration, and thus the scale to measure PSM needs to be more fully explored and examined. Further validation studies on the PSM scale should be done in different contexts and in different samples. Minor adjustments on the PSM items may be done in order to get the better fit of the model in some contexts.

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Table 1

Standardized factor loadings and Alphas for the 14-item PSM scale in Kim (2006)

Factors and items	Sample 1 (n = 294)			Sample 2 (n = 290)		
	Factor loading	Alpha	Factor loading	Factor loading	Alpha	Factor loading
ATTRACTION TO POLICY MAKING						
PSM1: Politics is a dirty word. (R)	.466	.62	.056[a]	.478	.71	.297**
PSM2: The give and take of public policy making doesn't appeal to me. (R)	.606			.855		
PSM3: I don't care much for politicians. (R)	.729			.673		
COMMITMENT TO THE PUBLIC INTEREST						
PSM6: I consider public service my civic duty.	.683	.74	.991	.788	.74	.780
PSM7: Meaningful public service is very important to me.	.773			.887		
PSM8: I would prefer seeing public officials do what is best for the whole community even if it harmed my interests.	.684			.444		
COMPASSION						
PSM9: It is difficult for me to contain my feelings when I see people in distress.	.774	.74	.812	.594	.60	.802
PSM11: I am often reminded by daily events how dependent we are on one another.	.732			.617		
PSM12: I am rarely moved by the plight of the underprivileged. (R)	.587			.561		
PSM13: To me, patriotism includes seeing to the welfare of others.	.535			.428		
SELF-SACRIFICE						
PSM19: Serving other citizens would give me a good feeling even if no one paid me for it.	.688	.73	.803	.766	.72	.697
PSM20: Making a difference in society means more to me than personal achievements.	.564			.518		
PSM 22: I am prepared to make enormous sacrifices for the good of society.	.659			.639		
PSM24: I believe in putting duty before self.	.638			.581		

Note. (R): reversed coding. All standardized factor loadings except (**) or ([a]) are significant at $p < .001$.

[a] $p > .05$, ** $p < .01$.

Source: Kim (2006).

Table 2

Standardized factor loadings for the 14-item PSM scale (n = 690)

Factors and items	Factor loading	Alpha
ATTRACTION TO POLICY MAKING		
PSM1: I am interested in making public programs which are beneficial for my country or the community I belong to.	.745	.75
PSM2: Sharing my views on public policies with others is attractive to me.	.772	
PSM3: Seeing people get benefits from the public program I have been deeply involved in brings me a great deal of satisfaction.	.610	
COMMITMENT TO THE PUBLIC INTEREST		
PSM4: I consider public service my civic duty.	.705	.70
PSM5: Meaningful public service is very important to me.	.807	
PSM6: I would prefer seeing public officials do what is best for the whole community even if it harmed my interests.	.541	
COMPASSION		
PSM7: It is difficult for me to contain my feelings when I see people in distress.	.722	.71
PSM8: I am often reminded by daily events how dependent we are on one another.	.557	
PSM9: I feel very sympathetic to the plight of the underprivileged.	.786	
PSM10: To me, patriotism includes seeing to the welfare of others.	.462	
SELF-SACRIFICE		
PSM11: Serving other citizens would give me a good feeling even if no one paid me for it.	.587	.75
PSM12: Making a difference in society means more to me than personal achievements.	.716	
PSM13: I am prepared to make enormous sacrifices for the good of society.	.708	
PSM14: I believe in putting duty before self.	.629	

Correlations among factors			
	1	2	3
1. Attraction to policy making			
2. Commitment to the public interest	.523		
3. Compassion	.443	.713	
4. Self-sacrifice	.700	.573	.511

Note. All standardized factor loadings and correlations are significant at $p < .001$.

Table 3

Standardized factor loadings for the 12-item PSM scale (n = 690)

Factors and items	mean	S.D.	Factor loading	Factor Loading on PSM
ATTRACTION TO POLICY MAKING				
PSM1	3.48	.73	.746	.683
PSM2	3.42	.74	.775	
PSM3	3.79	.70	.604	
COMMITMENT TO THE PUBLIC INTEREST				
PSM4	3.70	.72	.706	.855
PSM5	3.74	.72	.807	
PSM6	3.84	.81	.540	
COMPASSION				
PSM7	3.99	.63	.738	.725
PSM8	3.83	.67	.549	
PSM9	4.00	.69	.787	
SELF-SACRIFICE				
PSM12	3.26	.84	.721	.640
PSM13	3.21	.78	.749	
PSM14	3.47	.78	.649	
Inter-factor correlations and reliability coefficients				
	1	2	3	
1. Attraction to policy making	(.75)			
2. Commitment to the public interest	.521	(.70)		
3. Compassion	.416	.713	(.73)	
4. Self-sacrifice	.664	.500	.355	(.75)

Note. Values in parentheses indicate the reliability coefficients for the scale. All standardized factor loadings and correlations are significant at $p < .001$.