

# How does Merit Pay Policy Matter to PSM?

## The Moderating Role of Policy Expectancy

Fanrong Meng, Jiannan Wu

### Abstract

Motivation scholars have argued that intrinsic motivation, which has been noted as having a large effect on employee attitudes and performance, could be crowded out by extrinsic reward such as money. Some studies also have provided indirect evidence that extrinsic rewards decrease intrinsic motivation in public organizations. Few empirical studies have, however, examined the relationship between extrinsic rewards and PSM from a policy perspective. This study aims to explore how merit pay policy works and whether it can influence PSM of public sector employees. Using data from Chinese compulsory school teachers, this research tests the influence of merit pay policy on public service motivation (PSM) by multiple regression analysis. The theoretical framework is constructed by discussing linking PSM and perceived policy effectiveness. Perceived policy effectiveness refers to a belief on the part of involved actors that public policies are achieving their set goals. We formulate measures of perceived policy effectiveness by referencing the related policy documents and interviewing principals and teachers. The result demonstrates that the relationship between perceived effectiveness of merit pay policy and PSM is U-shaped. The teacher's PSM would decline if they feel weak policy effectiveness and it would not increase until they perceive more policy effectiveness. In addition, policy expectancy moderated this link, suggesting expectation play an important, contingent role. Finally, the implications of the results for theory and managerial strategies for performance pay, study limitations and future research agenda are discussed.

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## **Introduction**

The importance of monetary reward in the organization human resources management has been widely recognized. Prior research has extensively studied the incentive impact of economic reward on the employees' motivation. Many scholars argued that intrinsic motivation, which has been noted as having a large effect on employee attitudes and performance (Deci & Ryan, 2004), could be crowded out by extrinsic reward such as money (Frey & Jegen, 2001). Some studies also have provided indirect evidence that extrinsic rewards decrease intrinsic motivation especially in public organizations (Georgellis, Iossa & Tabvuma, 2010). However, performance-related pay has long been popular among government officials in more and more countries (Ingraham, 1993; Kellough & Lu, 1993; Perry, Engbers & Jun, 2009) and increasing numbers of performance-related pay programs are implemented as an motivating tool in various public sectors in the past three decades (Bush, 2002; Losey, 2009; Kellough & Nigro, 2002). For example, in the United States policy makers have been discussing whether merit pay should be offered to public school teachers, as is commonly the case in the United Kingdom. The Chinese government also set off the merit pay reform in public service institutions in 2009 and the reform is supposed to expand from compulsory schools to grassroots the public health care institutions and other scientific institutions gradually (Xinhua News, 2009). However, many scholars have questioned the actual result of performance-related pay in public organizations in many aspects (Houston, 2009; Ingraham, 1993; Kellough & Lu, 1993; Kellough & Nigro, 2002; Milkovich & Wigdor, 1991; Perry, Engbers & Jun, 2009; Perry, Mesch & Paarlberg, 2006).

In recent years, with the growing interests on public service motivation (PSM), a general

altruistic motivation to serve the others and grounds primarily or uniquely in public institutions and organizations (Perry & Wise, 1990, p.368), more and more scholars began to focus on the relationship between public service motivation and performance-related pay. On one hand, Houston (2009) and Moynihan (2008) have suggested variable pay systems overlook and may even diminish the altruistic intentions of public sector employees based on the crowding theory (Houston, 2009; Moynihan, 2008; Perry, Engbers & Jun, 2009). On the other hand, Stazyk (2012) drew a sample of U.S. local government managers and found performance-related pay is associated with greater job satisfaction, especially among employees who possess stronger public service motives (Stazyk, 2012).

Of the many types of performance-related pay, merit pay most frequently in the context of educational reform and public sectors. It provides bonuses for workers who perform their jobs effectively, according to measurable criteria. The implementation of merit pay in public sectors is usually associated with related policy. Of more practical importance, to study the impact of merit pay policy can provide the insight into the effectiveness of the reward policy. The results will guild the policy makers to understand how the employees think about the policy and what kind of effect the reward policy can result in. In an attempt to fill the gap between normative discussion and empirical evidence, this research tests the effect of merit pay policy and explores the condition moderate the effect. As perceived measures are often employed in public management research and some studies demonstrate that employee perception is substantially correlated with an objective outcome (Boyd, Dess, & Raheed, 1993; Cho & Perry, 2012), we consider the perceived merit pay policy effectiveness as the measure to reflect the practical result of performance-related pay.

Based on the controversial findings of the effect of performance-related pay in the

previous literature, we assume curvilinear relationship between the perception of merit pay policy effectiveness and PSM. Then, to more fully understand the differences embedded in merit pay policy cognition, we examine the indirect effect of policy expectancy, a critical determinant of employee behavior, on the PSM. Specifically, we examine not only the direct effect on PSM by perceived policy effectiveness, but also how the relationship between perceived policy effectiveness and PSM is moderated by the employees' policy expectancy. This study aims to contribute to the literature in several ways. First, we extend reward policy research by examine perceived merit pay policy effectiveness as a predictor of public service motivation. Second, we examine the role of policy expectancy in the relationship between perceived merit pay policy effectiveness and PSM. Last, by studying the antecedent of public service motivation in China, we extend the existing public service motivation literature, which has been based primarily on theories developed in Western contexts.

## **Theory and Hypotheses**

### **Perceived Merit Pay Policy Effectiveness and Public Service Motivation**

Perceived policy effectiveness refers to a belief on the part of involved actors that policies are achieving their set goals (Lubell, 2003). For the goal of merit pay policy in public sectors, the assumption is to help organizations attract and retain the best and brightest employees, and improve organizational flexibility, increase cost savings, and generate better outcomes for citizens (IPMA-HR, 2007, p. 4). The theoretic basis of this assumption is expectancy theory and reinforcement theory, which suggested that pay could be used to create consequence for desired behaviors such as high performance (Perry,

Mesch, & Paarlberg, 2006; Perry, Engbers & Jun, 2009). A considerable research also have proved that performance pay may provide the perception of increased self-determination<sup>1</sup> because the employee may optimize the combination of effort and income in accordance with their own preferences (Fletcher & William, 1996; Eisenberger, Rhoades & Cameron, 1999; Green & Heywood 2008), but not generally demotivate the employee or crowd out intrinsic motivation.

As Perry and Wise defined PSM: "an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations"(Perry & Wise 1990, p.368), other definitions also have been offered and all are essentially compatible in PSM is a needs-based approach to motivation. The needs of PSM may be in different ways which root in rational (maximizing individual self-interest), normative (beliefs and values about what is proper) and affective (human emotion) motives (Perry & Wise, 1990, Taylor, 2007; Clerkin & Cogburn, 2012). Although many public service motivation scholars suspect that public employees self-select into the public sector in order to fulfill their altruistic motives and intentions (Stazyk, 2012), it is not conflict with the other basic needs that human being should contain. As money is an effective tool to satisfy biological and psychological needs (Maslow, 1970), the economic reward is the foundation for people to pursue his belief and value. The employees obtained more reward based on merit pay policy would feel his effort in work are approved and appraised fairly, which, in turn, leads them to work harder and enjoy the work more. In relation to the motivation literature, besides the influence of socio-demographic and socio institutional factors such as education, family, and religion in shaping PSM (Perry, 1997), Moynihan and Pandey (2008) also demonstrated that organizational institutions can be antecedents of PSM (Moynihan

& Pandey, 2008)). Thus, the effective merit pay policy may play an incentive role to the public sector employees and foster their PSM. From this, we would infer that the more merit pay policy effectiveness perceived, the more they will be able to motivated, thereby enhancing PSM.

On the other hand, a considerable body of researches argued that there are adverse effects of incentives by implementing merit pay in the public sector (Ingraham, 1993; Kellough & Lu, 1993; Kellough & Nigro, 2002; Milkovich & Wigdor, 1991; Perry, Engbers & Jun, 2009; Perry, Mesch & Paarlberg, 2006). Their theoretic basis is mainly from motivation crowding theory, which suggests that extrinsic motivators such as monetary incentives or punishments can undermine (or, under different conditions, strengthen) intrinsic motivation (Frey 1997; Frey & Jegen 2001). In particular, financial incentives may not only 'crowd out' an intrinsic motivation if the incentive is considered to be controlling (Frey 1997; Frey & Jegen 2001), it may also change the norms that guide behavior in accordance with the incentives (Breggn, 2013). PSM is widely accepted as a concept of altruistic motives which captures motivation to help others and society (Hondegheem & Perry 2009). Like intrinsic motivation, it is characterized by a wish to act in a certain manner without external rewards or recognition (Deci & Ryan, 2004). However, PSM scholars have always worried that variable pay may cause employees to engage in goal displacement and gaming, ignore due process outcomes, and overlook other relevant organizational values (Houston, 2009; Moynihan, 2008, pp.257-258), which would finally diminish employees' PSM.

In the psychological theory, the argument about the relationship between intrinsic motivation and extrinsic motivation are always continued. Deci ((Deci, Koestner & Ryan, 1999) demonstrates financial and performance-based incentives can reduce intrinsic motivation among employees (Deckop & Cirka, 2000; Weibel, Rost & Osterloh, 2010). According to Frey, there is a locus of control to determine the intrinsic motivation is crowded in or out by the extrinsic motivation. If individuals perceive them to be controlling, external interventions crowd out intrinsic motivation and individuals would react by reducing their intrinsic motivation. On the contrary, if the intervention is perceived as supportive which means self-esteem is fostered and individuals feel they gain more self-determination, it will ‘crowd in’ intrinsic motivation (Frey & Jegen 2001). Hence, a crucial question is whether the merit pay policy effectiveness perceived by employees can be interpreted controlling or supportive in the public sector.

To reconcile these inconsistent findings, we reason that the link between the extents of perceived merit pay policy effectiveness and PSM might be curvilinear in the U-shape. That is, at relatively low levels of policy effectiveness, in which the policy effectiveness is less, employees in the public sectors cannot perceive more reward effect which suffered their self-determination and may crowd out their PSM. However, at relatively high levels of policy effectiveness perception, employees may feel their work get reasonable reward and their personal value approved by the organization, and then enhance PSM. Based on this discussion, we hypothesize the following:

*Hypothesis 1:* The relationship between perceived merit pay policy effectiveness and public service motivation is curvilinear in the U-shape.

## **The Role of Policy Expectancy in the Nonlinear Policy Effectiveness and PSM Relationships**

### *Expectancy theory*

Expectancy theory has been recognized as one of the most widespread ways of determining individual motivation (Ferris, 1977). Vroom (1964) defined expectancy as a process governing choices among alternative forms of voluntary activities, a process controlled by the individual. In this theory, motivation is thought to result from an individual's perception of the environment and expectations based on these perceptions (Fudge & Schlacter, 1999; Isaac, Zerbe & Pitt, 2001). Essentially, expectancy theory argues that individuals are active, thinking, predictive, monitor and evaluate the consequences of their behaviors (Burton, Chen, Grover & Stewart, 1992). Vroom suggests that motivation, expectancy, instrumentality, and valence are related to one another by the equation:

Motivation = Expectancy x Instrumentality x Valence.

The multiplier effect in the equation is significant. It means that higher levels of motivation will result when expectancy, instrumentality, and valence are all high than when they are all low. The multiplier assumption of the theory can be explained as following: individuals with high levels of expectancy believe that if they put forth enough effort, they will be able to perform in the desired manner (Mitchell, 1974; Van Eerde & Thierry, 1996). Individuals who believe that they will be rewarded for their performance have high levels of instrumentality (Van Eerde & Thierry, 1996). The last element, valence, refers to whether a person values the reward being offered with those desiring (Fudge & Schlacter, 1999). Based on this model, positive attitudes and behaviors can be enhanced by strengthening



the relationship between effort and performance, tying performance to rewards, and ensuring those rewards are desirable (Sloof & Van Praag, 2008).

Over the years, a number of empirical researches ratified the various linkages relating to the model (Harrell & Stahi, 1980; Hope & Pate, 1988; Klein, 1991; Snead & Harrell, 1994; Chiang & Jang, 2008; Lee, 2007). In addition to explain motivation and work performance (Vroom, 1964), expectancy theory has also been used to explain employee attitudes such as job effort, job performance, job satisfaction, and organizational commitment, managerial motivation, occupational choice, the importance of pay and pay effectiveness, leadership behavior, and leader effectiveness (Mitchell, 1974; House, Shapiro & Wahba, 2007). The above researchers have demonstrated that expectancy theory can support an appropriate theoretical framework to explain the motivation and attitude, which also suggests its appropriateness for use in examining the issue of PSM in public sector employees.

### ***Policy expectation as a moderator***

Ferris et al. (2006) indicated that examining moderators of nonlinear relationships can provide an additional level of precision virtually ignored by most researchers. Although the nonlinearity relationship of perceived merit pay policy effectiveness and PSM has been discussed in the previous section, whether individuals can fully benefit from the policy is likely to be influenced by both the individual's internal attitude toward the policy and the practical implementation in the external environment. Expectation refers to the degree of beliefs. The distinctive characteristic of the expectancy-value theory is the attempt to relate action to the perceived attractiveness of expected consequences. In other words, the level

a person believes he or she can obtain the desired outcomes and fulfill the personal value associated with this activity will influence the degree of motivation he actually fostered by the real effect he perceived. If one's expectation is very high to a policy but the real effect could not reach the level of expectation, the person will be disappointed on the policy, which might influence the level of motivation cultivated by the policy. Bandura (1977) pointed out that a person can believe that a particular action will lead to some defined outcome but may also doubt if the action can be performed successfully. It is reasonable to think that there must be some gap between the ideal expectation and practical result. In fact, many scholars doubted the overall utility of merit pay policy in the public sectors. Research also suggests that these positive benefits may be offset by the poor policy implementation (Perry, Engbers & Jun, 2009). The preconditions for the successful implementation of the merit pay include sufficient financial resources, standardized criteria, clearly designed variable pay system (Houston, 2009; Kellough & Lu, 1993; Kellough & Nigro, 2000; Sanders, 2004; Rubin, 2009; Rubin & Kellough, 2012). The more positive policy effect a person perceived from the reality, the more policy satisfaction would be reached and the incentive role of the policy can be played. On the contrary, the less policy effectiveness appeared, there would be more disappointment and the less motivation for the employee to do the job as the policy goal designated. As PSM is "a general altruistic motivation to serve the interests of a community of people" (Rainey & Steinbauer 1999, p23), an individual's expectation level concerning the consequences of the action and the incentive value of the consequences produced by the action would influence his or her motivation to serve others.

Hence, we posit that the employees' expectancy of merit pay policy and the perceived

policy effectiveness may play an interaction role on the PSM. For employees with high policy expectancy, they would be frustrated if they perceive the result of the policy is not as effective as they imagined. Their motivation to work for others would be influenced and not be increased until they regarded they have obtained the expected reward and personal value from the policy implementation. In contrast, those with less policy expectancy are less influenced by the difference between expectation and practical policy effect because they are mainly driven by their own altruistic motivation, namely, public service motivation, but not by the policy. Specifically, compared with those with low policy expectancy, those with high expectancy have a greater need to adapt to the gap between ideal and reality. Once the real effect of the policy is just as what they expected, they will emerge more approval to the policy maker and implementers due to the value convergence. Thus more PSM will be fostered. Therefore, at less policy effectiveness, we assume that the decline PSM experienced by public service employees will be somewhat dampened for those with less policy expectation compared with those with more. At more perceived policy effectiveness level, we assume that the associated increase in PSM will be at a faster rate for those with more expectation than those with low policy expectation. Based on the above discussion, we consider the following hypotheses:

*Hypothesis 2:* Policy expectancy will moderate the U-shaped relationship between perceived merit pay policy effectiveness and PSM. Specifically, at low levels of perceived policy effectiveness, the decline in PSM associated with higher policy expectancy will be faster and more pronounced, and at high levels of perceived policy effectiveness, the rise in PSM associated with lower policy expectancy will be slower.

## **Methodology**

### **Samples and procedures**

To test the hypotheses, we surveyed 700 Chinese compulsory school teachers from Guangdong and Shaanxi Provinces in 2011. Merit pay policy was implemented in primary and middle schools in China from 2009 and had been in place for 2 years when this study was conducted, a period considered sufficient for the effects of the pay policy to emerge. We developed a questionnaire provided to Chinese compulsory school teachers either directly or by mail. Teachers completed the survey during school time and gathered to fill in the questionnaire at a central location. After initially description the purpose of the study and the rating procedure by the researchers, all the respondents were required to complete the questionnaire independently and anonymously. The researchers collected each questionnaire when the teacher had finished filling it in. Teachers unable to attend the meeting were contacted in person and asked to complete and return the questionnaire in a sealed envelope to their supervisor, who then mailed all the questionnaires to the researchers together.

Out of the 648 responses (92.6% return rate), 581 valid questionnaires (89.7% effective rate) were obtained with complete information for each of the variable used in this study. The collected data were from teachers in 14 compulsory schools in the provinces of Shaanxi and Guangdong. Shaanxi is located in northwestern China and had a GDP per capita of US\$3,179 in 2010, while Guangdong is in southeastern China and had a GDP per capita of US\$15,800 in the same year. Of the schools included in our sample, 6 were from Guangdong and 8 were from Shaanxi. The number of valid questionnaires for each

province was 282 and 299 for Shaanxi and Guangdong, respectively. Although there's a big economic gap between these two regions, a mean  $t$  test of the samples for the two provinces indicated no significant differences among the scores for each item between respondents from the provinces ( $p > 0.10$ ). While not a random sample, the demographic makeup of the sample is representative of the compulsory school population as compared with the Chinese Educational Statistics (2010 Edition) indicated. Among the teachers in the overall sample, 29.1% were male and 70.9% were female. Basic demographics data for respondents are presented in Table 1.

Table 1 here

## **Measures**

All of the scales used were responded to on a 5-point Likert scale unless otherwise indicated, with anchors of 1 = strongly disagree and 5 = strongly agree. Items in each scale were translated from English to Chinese and then back to English again to check the semantic deviation to avoid misunderstandings of the items. The scales were summed to create an overall score for each variable, with higher scores representing higher levels of the constructs.

### ***Public Service Motivation***

Based on Perry's (1996) identifying multidimensional scale to measure PSM, a number

of studies exploring dimensions and items of PSM have been conducted in the United States and many other countries. In Perry's work, four dimensions are included, namely, attraction to policy making, commitment to public interest, compassion, and self-sacrifice. However, scholars have developed or deleted one or more dimensions in different contexts<sup>2</sup>. According to the characteristics of the sample in this study, we used the shortened 5-items version adapted from Perry's (1996) original scale (Alonso & Lewis 2001; Brewer & Selden 2000; Kim 2005; Pandey, Wright & Moynihan 2008; Wright & Pandey, 2008). This scale has been widely used recently and contains three dimensions—commitment to public interest, compassion, and self-sacrifice which can represent the affective or normative motives most closely associated with the altruistic appeal of public sector values (Wright, Moynihan & Pandey, 2011). The Cronbach's alpha value for this measure was .741.

### ***Perceived Merit Pay Policy Effectiveness***

Both the independent variable and moderators in this study were developed based on focus group discussion and policy content analysis. Three focus groups were carried out in Xi'an to identify participants' expectation and real outcome perception of the merit pay policy. Each group consisted of five to eight participants and lasted for an average of 40 minutes. Participants were contracted teachers in public schools and three-fourths of them were first-line teachers. Participants were evenly distributed in terms of age and most of them were well educated, with 72% having a college degree or above. Focus group discussions were voice recorded, with notes on key issues taken. Content analysis was adopted to identify policy effectiveness themes.

The independent variable for this study is perceived policy effectiveness of merit pay,

which focuses on the stakeholders' perceptions of whether or not current policies are likely to significantly address the existing problems and reach the policy objectives. In the previous studies, the scholars measured the perceived policy effectiveness containing the questions on general policy satisfaction and likelihood of the policy goal attainment (Lubell, 2003). According to the merit pay policy issued to the Chinese compulsory school teachers in 2009, the original goals include: (1) to reward the teachers based on their performance; (2) to improve the teachers' income no less than the level of civil service (3) to encourage the teachers to form life-long job commitment; (4) to attract more intelligent to work in compulsory schools (Jiaoren [2008]15). Based on the focus group discussion and policy content analysis, 7 questions that cover a variety of policy objectives were integrated. For example, the questions include: "I'm satisfied with the merit pay policy implementing at our school", "I get fair salary based on the performance appraisal", "My salary is above the average salary level of the local civil service", etc. Reliability and factor analyses were further conducted to refine the instrument. Five items were retained as one factor after the principal component factor analysis and the Cronbach's alpha value is .73.

### ***Merit pay policy expectancy***

The same procedural were conducted to develop the policy expectancy measures. Bandura (1977) examined expectation by dividing it into efficacy expectation and outcome expectation. An efficacy expectation is "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura 1977, p. 193), while an outcome expectation is "a person's estimate that a given behavior will lead to certain outcomes" (p. 193). Based on these definitions, we interpreted the policy expectation as the extent of the employees' belief on the expected outcome of the merit pay policy can be reached. The

finalized measurement of policy expectation consisted of 3 items supported from a statistical perspective, with the Cronbach's alpha value is .84.

### ***Control Variables***

On the basis of a review of the literature, the control variables used in this study were four individual variables (gender, age, tenure, education) and two organizational variables (school size and region). It is important to control these variables because extant researches have suggested or empirically shown that these variables account for positive associations with PSM (Clerkin & Cogburn, 2012). For instance, individuals' educational attainment (Bright, 2005; Moynihan & Pandey, 1997; Perry, 1997), age (Perry, 1997), female gender (Bright, 2005; Moynihan & Pandey, 2007; Perry, 1997), professional experience and memberships (Moynihan & Pandey, 2007; Perry, 1997) all can influence the level of PSM. Gender (0=female, 1=male) was selected as a control in order to control for the dominance of females in the compulsory schools. Age and Tenure are used as an interval variable in order to control for the various unobservable factors related to age, whereas education is used as an ordinal variable. Region was dummy coded (0=Guangdong, 1=Shaanxi) because our samples were drawn from two different regions with a wide disparity in economic development which may have a great impact on teachers' income. School size was measured by categorizing the number of employees into two group sizes: "1"– fewer than 50 employees, "2" more than 50 employees.

### ***Measurement reliability and validity***

Since the data source in this study were mainly derived from the perceptions of survey respondents, it is essential to minimize the influence of common method bias. Common



methods bias is partially controlled by the design of the survey instrument (e.g. reverse coded questions, spatial separation of the dependent and independent variables, and question-order randomization). As recommended by Podsakoff et al. (2003, p. 898), we also conducted a series of Confirmatory Factor Analyses (CFAs) on the dataset by AMOS 20.0. In the first step, a full measurement model was examined where all items loaded on their intended constructs. Acceptable overall model fit is reflected by the RMSEA =0.07 and  $\chi^2/df=3.946$ . The loading of each item on its intended construct is highly significant ( $p < 0.01$ ), exhibiting a good model fit of the measures (Anderson & Gerbing, 1988). Furthermore, Harman's single-factor test (Podsakoff et al. 2003) was performed, which involves a CFA where all variables are allowed to load onto one general factor. The analysis revealed a very poor fit model ( $\chi^2=1309.151$ ;  $df=65$ ; RMSE=0.158; CFI=0.576; IFI=0.580) and indicated that a single factor did not account for the majority of variance in this dataset.

Table 2 here

Finally, in order to assess the distinctiveness of constructs in this study, we used sequential  $\chi^2$  difference tests. Three alternative models were compared to the full measurement model. As Table 2 reveals, none of these alternative models yields an acceptable model fit, demonstrating all constructs in the study were distinctive from each other. We also assessed the Cronbach's alpha values for all the constructs, they were all higher than the .70 benchmark and show sufficient construct reliabilities (Carmines &

Zeller, 1979; Nunnally, 1978). Taken together, our measurement possesses adequate reliability and validity.

## **Results**

The means, standard deviations, correlations, and internal consistencies for each of the measures are found in Table 3. As shown in Table 3, among the control variables the correlations between region, school size, age and gender are significant with PSM. Regarding to the independent variables and moderate variable, both the perceived policy effectiveness and policy expectation are significant with the dependent variable and their relationships should be further explored by regression analysis. The policy expectancy received a higher rating than the policy effectiveness; the mean value of the former is 3.375, whereas the latter is 2.929. The result demonstrates that the teachers hold high expectation on the merit pay policy but the real effect of the policy is not as good as they expected.

Table 3 here

Hierarchical regression analysis was used by IBM SPSS Statistics 20.0 to test the model because it can be used to test curvilinear relationships directly as well as moderating relationships. We followed Aiken and West's (1991) recommendation to mean-center all the independent and moderator variables for the purpose of minimizing the possible presence of multicollinearity. The calculated variance inflation factors (VIF) are all below

the cut-off point of 10 (Neter, Wasserman & Kutner, 1990), so multicollinearity is not a concern in our analysis. Curvilinearity was tested by computing a squared perceived policy effectiveness and entering it in the third step after controls and the linear terms were entered. In the regression model, a curvilinear relationship is evident if the addition of this quadratic term results in significant incremental variance after the linear effect has been taken into account (Cohen, West, & Aiken, 2003). In this study, hypothesis 1 predicted that the relationship between perceived merit pay policy effectiveness and PSM would be U shape. As shown in Table 5 (Model 3), the squared term coefficient is significant ( $\beta=0.085$ ,  $p < .005$ ). As shown in Figure 1, graphing this curvilinear relationship suggests that the curve initially slopes downward, then turns back, and then becomes slightly positive at more perceived policy effectiveness. Thus, Hypothesis 1 was supported.

### ***Testing for moderating Effects***

To assess moderation of the curvilinear relationship, we created interaction terms composed of both the perceived policy effectiveness and the quadratic perceived policy effectiveness and the moderator, policy expectancy. Following procedures outlined by Baron and Kenny (1986) and Aiken and West (1991), these terms were entered last into the regression analysis after the direct effects and linear interaction terms. Hypothesis 2 predicted that policy expectancy interdependence would moderate the curvilinear relationship between the perceived policy effectiveness and PSM. In Table 4 (Model 4), the significance of the cross product term shows the interaction of policy expectancy interdependence and perceived policy effectiveness on PSM to be significant ( $\beta = -.097$ ,  $p < .10$ ); the overall variance explained by the block of moderators was also significant

( $\Delta R^2=0.005, p < .001$ ). Hence, the moderation effect was supported.

To facilitate interpretation of the interaction effect, the nature of the interaction was graphed following procedures prescribed by Cohen and colleagues (2003) and Aiken and West (1991), which shows a comparison by dividing individuals with high and low policy expectancy interdependence into a group of one standard deviation above and another group with one standard deviation below the mean of the moderator. Graphing the interaction effect in this way demonstrates how the shape or form of the curvilinear relationship varies as a function of the level of policy expectancy (Aiken & West, 1991). As shown in Figure 1, the direction of the moderation is in the direction expected; those teachers with high policy expectancy interdependence experienced a somewhat faster decline in PSM compared with those with low policy expectancy, with the impact most pronounced at low levels of policy effectiveness.

Table 4 here

## **Discussion**

In the literature, the results regarding the relationship between merit pay and public service motivation seemed mixed. It has been argued that extrinsic motivation and variable pay should be redesigned to promote intrinsic motivation – especially public service motivation – in the public sectors (Houston, 2009; Moynihan, 2008; Perry, Engbers & Jun, 2009). The aim of this study was to identify the effect of merit pay policy on the public

service motivation in public sectors. Using the survey data from 581 compulsory school teachers in China, we try to resolve previously inconsistent findings by proposing and finding a curvilinear U-shaped relationship between the perceived merit pay policy effectiveness and PSM. More interestingly, how this relationship was moderated by policy expectation was also explored.

The results of this study provided support for many aspects of the theoretic framework. First, the finding indicated that the impact of perceived merit pay policy effectiveness on PSM is U-shape and more complex than previously thought. As shown in figure 1, PSM initially decreases as the perceived policy effectiveness rises; however, at higher level of perceived effectiveness it starts to increase slightly. It suggests that there may be a crucial threshold in the degree of policy effectiveness an employee can perceived beyond which the positive impact on PSM can occur. The results consolidate the crowd out theory (Frey & Jegen 2001), which emphasize that there's a locus of control to determine the intrinsic motivation is crowded in or out by the extrinsic motivation. The previous study on the relationship between performance pay and motivation mainly focused on the crowding out effect but ignore the crowding in effect. Another possible explanation for the crowding out effect is that employees often initially take on activities only hesitantly and as a result of external pressure, which results in the practice of merit pay policy can in fact awaken intrinsic motivation and interest in the task (Frey & Osterloh, 2002), for instance because it is seen as highly challenging the altruistic value of public service employees. But with the more positive result of the policy appearing, the teachers may have more self-efficacy which evokes more passion to work. In this case, the external incentive sets off an internalization process; in the long term, extrinsic motivation is crowded out and intrinsic

motivation strengthened. It is feasible that merit pay in combination with a relatively high and fair fixed salary could have a far less crowding-out effect than when the pay is combined with a low fixed salary.

Figure 1 here

Second, the policy expectancy can moderate the relationship between perceived policy effectiveness and PSM. As suggested by Figure 1, those with high policy expectancy tend to develop comparatively less level of PSM under all level of policy effectiveness perception. The concept of expectancy refers to the degree of belief that an act will be followed by some consequences (Feather, 1990). What a person does in a situation is assumed to relate to the expectation that the person holds and to the subjective value of the outcomes that may occur following the action (Feather, 1982). In related to the policy process, the policy stakeholders will unexceptionally hold policy expectation which reflect their belief on the extent the policy goal can be reached. The purpose of the merit pay policy is to reward employees for individual contributions and to encourage the best performance possible. Therefore, if an individual holds high policy expectation, which means he believes the possibility of the policy to satisfy his economy and social recognition need is high. As a growing number of studies suggest that public employees, even those with high PSM, may still value financial rewards (Alonoso & Lewis, 2001; Newstrom, Reif & Monczka, 1976; Rainy 1982; Vandenabeele, 2008; Wittmer, 1991; Wright, 2007;

Wright & Pandey, 2008), the one with high expectation on the merit pay policy apparently value financial reward more than those with low policy expectancy. In other words, the factor to drive them to work mainly depends on extrinsic motivation rather than intrinsic motivation. Thus the influence on the curvilinear relationship between perceived policy effectiveness and PSM is more distinct than those with less policy expectancy.

Thirdly, this study contributes to the expectancy-value theory and PSM literature in the public service context. According to Expectancy-value theory, people's motivation to choose and strive for a particular goal is primarily conceptualized in terms of the intensity or strength of motivation to attain that goal (Vansteenkiste, Lens, Witte & Feather, 2005). Needs and values are assumed to affect a person's motivation, so that some objects, activities, and potential outcomes are perceived as having positive valence (they become attractive), while others have a negative valence (they become aversive) (Feather, 1990). In this study, the curvilinear influence on one's PSM by the real pay policy effectiveness was more distinct when extrinsically oriented expectation is higher, whereas when no external reward expectancy was available, people' choices and preferences could be most accurately accounted for by an expectancy-valence theory utilizing an intrinsic valence function, which coincides the previous finding by experiment research (Shapira, 1976). In the PSM literatures, a number of scholars have examined that the employees with high PSM value more intrinsic than extrinsic aspects of work (Bright, 2005, 2009; Perry, 1997; Houston, 2000; Crewson, 1997). Our analysis revealed that individuals who report a low level of merit pay policy expectancy are more likely to keep a high level of PSM, compared with those with high policy expectations, which indicates that the merit pay policy may have less impact on the employees who care less on monetary reward. This result also provided

support for the assumption that individuals who pursue public service careers are more likely to derive satisfaction from public sector work and less likely to be motivated by extrinsic benefits such as salary (Perry, 1996; Lewis & Frank, 2002; Pandey & Stazyk, 2008). With these findings in mind, we draw some general conclusions and implications for practice below.

### **Managerial implications**

Since empirical accounts of merit pay policy and their effectiveness are still rare in public service institutions in China, this study provides several implications for merit policy implementation to Chinese public service employees. First, our findings reveal that the impact of perceived merit pay policy effectiveness on the PSM is not straightforward but a curvilinear shape. Specifically, before the effectiveness of the merit pay policy reached a certain point, the employee's PSM level will not increase. This calls for a proactive HR department in public sector, which should optimize the merit pay budget resources, and make performance evaluation plan and distribute the reward fairly. Thus the real policy result meets the expected goal and employees are motivated because their need for monetary reward and social recognition are satisfied.

Second, our findings about the moderating effect of policy expectancy on the relationship between perceived policy effectiveness and public service motivation confirmed critical role of transparency in policy making and implementation. It sends an important message to managers that, to build reasonable policy expectancy, leaders should not only implement the policy fairly, but also interpreter the policy making process and executive plan clearly. If the information is asymmetric, employees would misunderstand the policy and form a too high expectation, which may reduce their PSM when they realize



the policy effect is not as good as they expected. The transparency in policy making and implementation can help to build the trust and understanding between leaders and employees. Hence, the policy result could be accepted easily although there would be some defects in the policy implementation.

### **Limitations and future research**

Although this study made theoretical contribution and practical implications, it has several limitations that need future research to address. First, this study assesses how employees' perceived policy effectiveness of merit pay interplay with policy expectancy in building employees' PSM, yet it does not explore whether the management of organization contributes to PSM through other mechanisms such as getting access to key resources and leadership capability. It would be meaningful to investigate how leaders cultivate employees' PSM through their management under the merit pay policy environment in public sector.

Second, we collected data at one point in time and the samples are only compulsory school teachers, which limits the conclusions to be made in other public service filed. As others have noted, PSM is a dynamic construct, and it may vary considerably across function or level of government (Brewera & Selden 1998), we believe that time-series investigation could provide stronger evidence of the impact on PSM by policy effect. And future investigations to the employees from other areas of the public service should be considered.

Third, the scales of policy expectation and perceived policy effectiveness of merit pay were self-developed by focus group within the definition. Though these measures are statistically acceptable, future studies should consider developing more comprehensive and

objective measurement to better represent these constructs. Finally, the measurement of PSM is the short-form scale based on the previous studies in the West countries. Indeed, Perry's original PSM scale conceives of PSM as a superordinate multidimensional construct (Edwards, 2001), a conceptualization that is in accord with the intellectual history of the concept in public administration. Thus more efforts are needed to test and refine the measurement scale of this important construct in the context of China in the future.

In sum, the theory development and empirical results reported in this study provide a useful first step toward a more advanced understanding of the role of merit pay policy effectiveness and their interplay with policy expectancy in achieving public service motivation in public institutions.

## **Note**

1. According to Deci and Ryan's self-determination theory (2004), if an environment fosters the basic needs of individuals, the degree of internalization of identities will be higher (Deci & Ryan, 2004).
2. Belgian and Swiss research (Giauque et al. 2009; Vandenaabeele 2008) has found, in addition to the original CPI dimension, one or more dimensions referring to public values related to administrative or constitutional governance. The fourth dimension, attraction to policy making, was omitted because it represents a rational or self-interested motive that is less value or mission specific and has been found to be only weakly correlated with the other five PSM items (Alonso and Lewis 2001; Camilleri 2006; Wright and Pandey 2008).

## **Appendix**

### **Survey Scales**

#### **Perceived Merit Pay Policy Perception**

1. I'm satisfied with the merit pay policy implementing at our school.
2. I get fair salary based on the performance appraisal.
3. My salary is above the average salary level of the local civil service.
4. The merit pay is inclined to the teacher in the first line.
5. The merit pay policy makes me have better understanding of my goal.

#### **Merit Policy Expectation**

1. I think it's necessary to implement merit pay policy on compulsory school teachers.
2. I hope to implement merit pay policy on compulsory school teachers.
3. I think merit pay policy can play an incentive role to compulsory school teachers.

#### **Public Service Motivation**

1. Meaningful public service is very important to me.
2. I am often reminded by daily events about how dependent we are on one another.
3. Making a difference in society means more to me than personal achievements.
4. I am prepared to make enormous sacrifices for the good of society.
5. I am not afraid to go to bat for the rights of others even if it means I will be ridiculed.

**Table 1 Descriptive Statistics for the Sample**

Variables	N	%	Variables	N	%
Gender			School Level		
Male	169	29.1%	Primary	265	45.6%
Female	412	70.9%	Middle	316	54.5%
Tenure			Pay Level		
<10	213	36.6%	Reduced	159	27.4
10-20	264	45.4%	No charge	256	44.1
>20	104	17.9%	Increased	166	28.6
Education			Work type		
≤Bachelor	562	96.7%	Administrator	16	2.8%
>Bachelor	19	3.3%	Teacher	565	97.2%
Region			School size		
Shaanxi	282	48.5%	<50	213	36.7%
Guangdong	299	51.5%	≥50	368	63.3%

**Table 2 Fit Statistics from Confirmatory Factor Analyses**

Models	$\chi^2$	<i>df</i>	$\chi^2/df$	RMSEA	IFI	CFI
Harman's single factor test	1309.151	65	15.987	0.158	0.580	0.576
Model A	1149.893	64	17.967	0.169	0.532	0.527
Model B	1015.632	64	15.869	0.158	0.590	0.585
Model C	407.553	64	6.368	0.095	0.852	0.85
Full measurement model	244.627	62	3.946	0.07	0.921	0.92

Note: N=581, \*\*p<0.001;  $\chi^2$ =chi-square discrepancy, *df*=degree of freedom; RMSEA=root mean square error of approximation; CFI=comparative fit index; IFI-incremental fit index

Model A: policy expectation, perceived policy effectiveness + public service motivation

Model B: perceived policy effectiveness, policy expectation + public service motivation

Model C: policy expectation + perceived policy effectiveness. Public service motivation

**Table 3 Descriptive Statistics and Correlations**

Variables	M	SD	1	2	3	4	5	6	7	8
1.Region	.515	.500								
2.School Size	.3666	.482	-.676*							
3.Gender	.291	.455	-.091*	.173*						
4.Age	2.468	.746	.194*	-.133*	.132*					
5.Education	.033	.178	-.189*	.222*	.053	-.090*				
6.Tenure	2.692	.902	.344*	-.291*	.068	.766*	-.141**			
7.Policy Expectation	3.375	.947	.077	-.129**	.003	.016	-.069	.009		
8.Policy Effectiveness	2.929	.810	-.116**	.036	.029	.044	.023	-.032	.561**	
9. PSM	4.058	.606	.134**	-.130**	-.090*	.105*	.016	.077	.167**	.078*

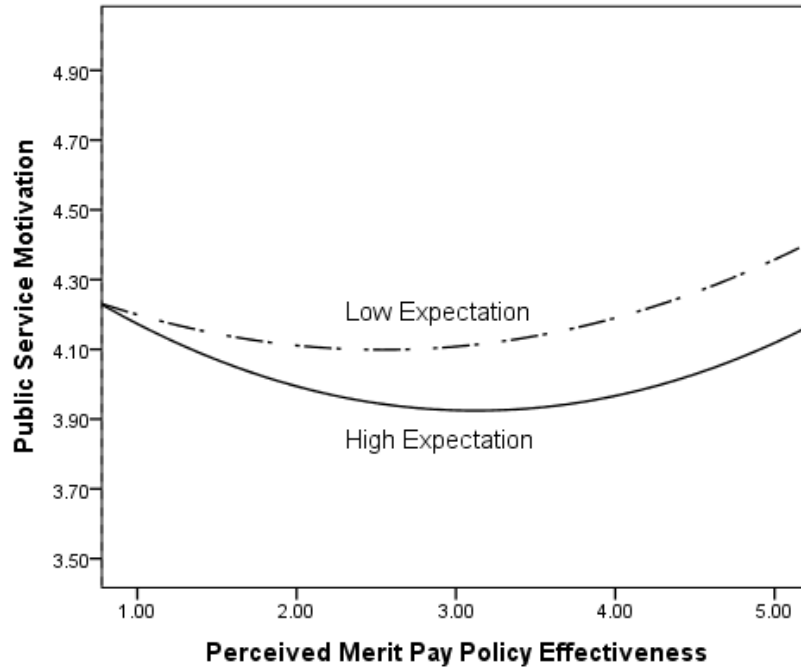
Notes: N=581; PSM=public service motivation, M=mean; SD=standard deviation

\*P<.05; \*\*p<.01

**Table 4 Hierarchical Regression Analysis — Dependent Variable: Public Service Motivation**

<i>Predictor</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
<b>Control variables</b>					
Region	-.085	-.084	-.076	-.080	-.081
School size	.072	.040	.035	.034	.043
Gender	.088**	-.090**	.092**	.089**	.091*
Age	-.157**	-.135**	-.135**	-.136**	-.150*
Education	-.055	-.066	-.071	-.072	-.071
Tenure	.080	.050	.047	.047	.061
<b>Main effects</b>					
Policy expectation		.191***	.190***	-.192	-.203
Policy effectiveness		.018	-.016**	-.030*	-.019
Policy effectiveness <sup>2</sup>			.085**	.021*	.028*
<b>Moderator model</b>					
Policy expectation x Effectiveness				.097*	.090*
Policy expectation x Effectiveness <sup>2</sup>					-.026
R <sup>2</sup>	.040	.064	.071	.076	.076
Adjusted R <sup>2</sup>	.030	.051	.057	.060	.058
F Value	3.991***	4.907***	4.878***	4.688***	4.270***

Note: N=581, \*p<.01, \*\*P<.05; \*\*\*p<.01



**Figure 1** The Moderating Effect of Policy Expectation on the Relationship between Perceived Merit Pay Policy Effectiveness and Public Service Motivation

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