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Fostering Employee Cooperation Behavior in the Federal Workplace: Exploring the Effects of Performance Management Strategies

Kai-Jo Fu[1], Jun-Yi Hsieh[2], and Tae Kyu Wang[3]

Abstract

The purpose of this study was to discover how performance management strategies foster cooperative behavior as a means of producing better outcomes. Using multiple data from the 2010 Federal Human Capital Survey provided by the U.S. Office of Personnel Management via its FedScope data portal and Federal Human Resource, we tested hypotheses that considered both individual- and agency-level factors in individual cooperative behaviors. This study highlights how performance management strategies promote employee cooperation such that the management practice is taken for granted; however, there is no research that examines the relationship between them. This investigation confirms several performance practices existing between and within the federal agencies. Managers can learn from the evidence provided and apply these strategies to induce cooperative behaviors that help to achieve organizational goals and improve organizational performance. The results reveal that performance management strategies display positive and nonlinear relationships with employee cooperation.

Keywords

cooperative behavior, performance management strategies, federal government

Introduction

The issue of cooperation is central to many of the problems confronted by people within group settings.[1] Given the amount of attention that has been devoted to the

[1]National Chengchi University, Taiwan
[2]University of Taipei, Taiwan
[3]Catholic Kwandong University, South Korea

Corresponding Author:
Jun-Yi Hsieh, Professor, Department of Public Affairs, University of Taipei, No.1, Ai-Guo West Road, Taipei, 10048, Taiwan.
Email: strategic60@hotmail.com

topics of cooperation between individuals within organizations (De Cremer, Zeelenberg, & Murnighan, 2006; Hill, 1990), researchers and practitioners now recognize that complicated issues and policy problems are neither simply bounded by organizational environments nor capable of being solved on their own. Meanwhile, intense pressure to achieve efficiency and effectiveness has encouraged public organizations to continually search for managerial remedies to improve government performance. Consequently, an emphasis on using more businesslike instruments in the public sector and promoting a performance culture has resulted in the growing use of outcome-based performance, pay-for-performance (PFP), performance accountability, and program assessment ratings tools (Dubnick, 2005; Heinrich, 2002; Moynihan, 2013). Public organizations need their employees to be more cooperative across functions, departments, and individuals to achieve better government performance. Furthermore, an investment in performance management strategies for facilitating cooperative behaviors is necessary (Ingraham & Getha-Taylor, 2008).

In practice, performance management strategies are expected to improve individual and organizational performance (Berman, 2006; Moynihan & Pandey, 2005). While previous efforts have tested a variety of ways in which performance management influences individual, group, and organizational outcomes (Campbell, 2015; G. Lee & Jimenez, 2011; Poister, Pasha, & Edwards, 2013; Rummler & Brache, 2013), investigations involving the relationship between performance management practices and individual cooperative behaviors are deficient. While no one denies the plausibility of this relationship, there is currently limited empirical evidence. It is essential to determine whether well-designed performance management tools can support continuous workforce development between organizations and cooperation among employees. This concern also highlights our research question:

Research Question: Can performance management strategies facilitate employee cooperation?

To understand the influence of performance management strategies on individual outcomes, complicated hierarchical processes are assumed rather than tested (den Hartog, Boselie, & Paauwe, 2004; DeNisi, 2000). In other words, public managers need to recognize that individual-level characteristics are often insufficient to address interactive management practices at the organizational level. In the public sector, performance management has been used in a variety of ways and contains an array of practices involving goal alignment (Ayers, 2013, 2015) and results-oriented management processes at either the managerial or the employee level (Behn, 2002; Heinrich, 2002; Poister, 2003).[2] At the organizational performance management is the establishment of organizational goals and the use of performance information to ensure effective management so as to achieve those goals (Moynihan, 2008). Each organization's performance could be evaluated in terms of major policy execution, financial performance, and other key areas (i.e., personnel, organization, quality of public services) using indicators such as inputs, processes, outputs, and outcome indicators (Kuhlmann, 2010). At the individual level, organizations apply personal performance plans,

performance appraisals, and the usual sticks and carrots to drive employee behavior and consequently improve individual performance (Behn, 2002). Empirical studies of individual factors often fail to consider such management practices, especially in the case of employees working in public organizations (Heinrich & Lynn, 2001); consequently, it would be beneficial to consider the hierarchical effects within the public sector to understand and facilitate individual cooperation.

Considering all of these elements, performance management can be understood as a system in which managers work with employees to set expectations, measure and review results, and reward performance to ensure that employee activities work together to be congruent with organizational objectives (Clark, 2005; den Hartog et al., 2004; Mondy, Noe, & Gowan, 2005). Based on these considerations, this study draws on and extends literature on social psychological theory, the prisoner's dilemma and social dilemma, principal–agent theory, and social capital to explain the cooperation within public organizations.

The purpose of this study was therefore to provide empirical evidence on how performance management strategies may influence employee cooperation, which is hierarchically nested in public organizations. We thus concentrated on individual- and organizational-level performance management strategies and conducted research inquiries with a focus on the theoretical lenses that underpin employee cooperation behaviors. We also developed hypotheses based on human resource management practices and theories derived from social psychological theory, the prisoner's dilemma and social dilemma, principal–agent theory, and social capital such as goal setting, performance appraisal and feedback, and rewarding performance. Two data sources were used to estimate our research question: the 2010 Federal Human Capital Survey provided by U.S. Office of Personnel Management via its FedScope data portal, and 2010 Federal Human Resource Data (FHRD). Drawing on the multilevel modeling results, we conclude by discussing the implications of our analysis for future research involving performance management strategies and individual cooperation.

Employee Cooperative Behaviors: Conceptualization and a Multilevel Perspective

Although the concept of cooperation has been widely researched, there has been difficulty in conceptual integration due to the numerous definitions of cooperation (Smith, Carroll, & Ashford, 1995). This study identifies four distinctive approaches to the conception and definition of cooperation and then integrates them into our theoretical model. First, one approach defines the concept of cooperation by focusing on the nature of the relationships that exist between the goals of social actors in any given situation (Deutsch, 1949a, 1949b; Tjosvold, 1984, 1986, 1998). Deutsch (1949a, 1949b) proposed that social interactions can be understood in terms of how participants' goals are related; thus, a situation is cooperative if participants perceive their goals as being aligned. Conversely, a situation is competitive if participants perceive their goals as being in opposition to each other. Drawing on the idea of Deutsch's theory of cooperation and competition, Tjosvold (1986) posited an integrated approach

and explicitly differentiated objective goal interdependence, as determined by the task and reward structure of the organization, and subjective goal interdependence, as perceived by organizational members. In particular, the perception of goal interdependence can encourage organizational or group members to engage in positive interactive behaviors.

Second, in contrast to these social interactions of cooperation, the research involving the prisoner's dilemma (e.g., Axelrod, 1984, 1997) and social dilemma (Hardin, 1968) defines cooperation as an act that maximizes the interest of the other (as an individual or as a collective) and define defection as an act that maximizes self-interest. Cooperation versus defection has been operationalized in many ways, all with well-specified clear situations. For example, the prisoner's dilemma game can be used to describe how performance culture fosters cooperative behavior. In this context, employees who have different kinds of rationality formed coalitions and then make better predictions of cooperation in the same organization (game) given the payoffs of the game. The employees expect that mutual cooperation yields a better outcome than mutual defection (Capraro, 2013).

Third, an individual should engage in cooperative behavior that appears costly to perform but has benefits for other individuals because of the rise of cooperation problems (Fama, 1980). Under the assumption of self-interest, employees often fail to work together to achieve the organizational goals or satisfy the expectations of public managers, which causes principal–agent problems. The principal–agent relationship explains how the manager (i.e., principal) enacts a series of performance management strategies to reduce the probability of opportunistic employee (i.e., agent) behaviors (i.e., moral hazard, adverse selection, and asymmetric information) that are incongruent with the manager's goals (Barney & Hesterly, 1996), to motivate individual cooperation, and then improve organization performance. Such problems can be solved by contractual obligations and formal structures of control. The formal hierarchy, regulations, and rules can be perceived as the alternative to socialized control (Ouchi, 1980). For example, job design and definition can force individuals to work together, while organizational structures and processes can provide details on how departments and groups must function. Moreover, agencies denote other institutional arrangements to solve principal–agency problems, which motivate individuals and organizations to work together for cooperation (Löffler, 1998). Agencies are characterized by the delegation of personal choice to somebody else. Cooperation initiated by contracts or agencies has to be understood as a combination of regulation (control is exercised by bureaucracies or government) and motivation (performance-oriented rewards and incentives; Löffler, 1998).

Fourth, social capital can help promote cooperation (Pestoff, 2014), which is crucial, and consequently there is the need to build trust (Acquaah, 2007; Fledderus, Brandsen, & Honingh, 2014; Putnam, 1995). Social capital refers to connections among individuals, social networks, and the norms of reciprocity and trustworthiness that arise from them (Putnam, 2000). Putnam (1995) suggested that social capital facilitates coordination and cooperation for mutual benefit. Bridging social capital mobilizes collective resources and promotes trust by allowing the employees to access

information and obtain resources that are essential for organizational performance. Ryu (2017) focuses on managerial social capital, meaning a top manager's network with his or her stakeholders through which the values (contents) are reciprocally transferred to create competitive advantages to accomplish the goals of a top manager. Within a hierarchical relationship, managerial social capital from their subordinates (i.e., trust in leadership) reduces the level of trust with their subordinates and thus reduces some economic transactions among organizational members. In summary, the above approaches help to explain why performance managerial strategies and organizational structures (e.g., hierarchical structure) can provide actors with an awareness of aligning actions (e.g., cooperative behaviors; Galbraith, 1977).

Cooperation is by nature a multilevel phenomenon that occurs not only between individual employees but also between individual employees and organizations. The impact of performance management strategies on employee cooperation can therefore comprise several plausible levels. This suggests that individuals are nested hierarchically within and between organizations to create a more comprehensive understanding of the complex concept of cooperative behavior and the function of performance management strategies. Research has shown that as employees become more deeply nested in their organizations, they are more likely both to establish deep ties among their fellow employees and stay with those organizations (T. W. Lee, Mitchell, Sablynski, Burton, & Holtom, 2004). The problem of cooperation can be reduced through processes of job embeddedness, meaning "a net or web in which an individual can become stuck in the job and organization" (Mitchell et al., 2001).[3] This process infuses members of organizational subunits with a willingness to cooperate and a desire to achieve the goals of the aggregate organization (Barnard, 1938). Therefore, the importance of information and incentives for the design strategies of complex organizations that can achieve coordinated adjustments to changes in their environments is highlighted.

Performance Management Strategies and Employee Cooperative Behaviors

As indicated above, performance management practices can be seen as a multilevel construct. The model thus proposes a logical sequence of the aligned set of performance management practices to depict the influence of the multilevel construct on employee cooperation. Based upon the above theoretical approaches, we have included individual-level predictors of goal setting (Ayers, 2013, 2015), performance appraisal (Rynes, Gerhart, & Parks, 2005), performance information (Moynihan & Pandey, 2005), and performance discussion with the supervisor (Clark, 2005). These variables focus on individual feelings or behaviors concerning performance management strategies. Moreover, several studies have documented that employee outcomes are associated with organization-level predictors, for instance, strategic communication with organizational goals (Andrews, Boyne, Meier, O'Toole, & Walker, 2012), performance culture (Kerr & Slocum, 2005), PFP (Perry, Debra, & Laurie, 2006), and performance-based accountability (Heinrich, 2002). These performance strategies are typically initiated by the organizations themselves. The following section will outline how these

within-organization level and between-organization level predictors influence employee cooperation.

Within-Organization Level Predictors

Goal setting. Goal setting is a powerful method of motivating people using management systems. Because individuals' roles are embedded in the larger context of organizations, clarity of organizational goals can involve organizational members' awareness of the agency mission and management emphasis on goals. Based upon the observations of social psychologists, the goal structures affect the processes and outcomes of cooperative actions (Tjosvold, 1986). If organizational members perceive goal interdependence, they will be more likely to engage in positive interactive behaviors (Tjosvold, 1988). Ouchi (1992) has suggested two management strategies that can help to realign organizational goals with individuals' actions by means of policies and procedures, and motive alignment through organizational incentives. Moreover, institutional designs enable individual employees to work together and behave and perform in ways that do not deviate from those of their colleagues. However, the connection between cooperation and performance has been taken for granted. No empirical studies have been conducted to test the relationship between goal setting and individual cooperation and, therefore, public employees have set a clear goal to achieve agency performance through cooperation. As a result, we formulate the following hypothesis:

> **Hypothesis 1 (H1):** Individual goal setting has a positive relationship with employee cooperative behavior.

Performance appraisal. Two competing views provide two alternate hypotheses related to adoption of performance appraisal. On one hand, a negative view emphasizes that to prevent the agency problem, principals can collect information about an agent's behavior (Barney & Hesterly, 1996). Control can be asserted through individual performance appraisal, a process of monitoring and rewarding employee performance (Whynes, 1993). In this view, agency theory indicates that increasing individual-level performance appraisal ratings cannot encourage cooperative behavior because employees are typically risk-averse when it comes to their pay (Eisenhardt, 1989). In other words, it is risky for individual employees to work with others as this may result in failure or collective efforts that cannot be shared. Accordingly, employees consider performance appraisal as a punitive instrument used to control their behaviors (Roberts, 1998). On the other hand, advocates of performance appraisal claim that it has several advantages that are not provided by results-oriented measures. Finding a fair way to assess individual performance is critical for circumventing the error-laden performance evaluation processes. When employees perceive a performance appraisal as fair, these negative consequences may be mitigated. The primary function of performance appraisal is standardizing and controlling employee behavior in an effort to minimize uncertainty; it requires explicit monitoring of routines, adherence to rules, and adequate information regarding cause–effect relations (Arvey & Murphy, 1998). Performance appraisal also

has a monitoring function, which can result in employees behaving in a compliant manner as it aligns with their best interests (e.g., by fulfilling the job description, employees can receive a raise). Empirical research has revealed that performance appraisal ratings can also be used in a broad organizational context involving contextual variables (Ferris, Munyon, Basik, & Buckley, 2008) and to encourage organizational citizenship behavior in a linear relationship (Rynes et al., 2005).

With the two different and opposing views, two sets of competing hypotheses are set. Under the positive view, the linear relationship between performance appraisal and employee cooperation is expected. Under the negative view, the relationship between performance appraisal and employee cooperation function also follows a nonlinear U-shaped curve, which decreases employee cooperation to an optimal point; as a result, employee cooperation increases.. These two sets of competing hypotheses can be proposed as follows.

Hypothesis 2 (H2): Performance appraisal that the employees feel satisfied with will have a linear relationship with employee cooperative behavior.
Hypothesis 3 (H3): Performance appraisal that the employees feel satisfied with will have a nonlinear U shaped (or curvilinear) relationship with employee cooperative behavior.

Performance feedback. Feedback is critical in maintaining effective performance, retaining commitment, and achieving organizational goals. Feedback must also be specific to offer constructive information on how to achieve objectives (Kluger & DeNisi, 1996). Two forms are addressed based on different types of feedback (Balcazar, Hopkins, & Suarez, 1985). One aspect is outcome feedback (e.g., information concerning performance outcomes) and the other is process feedback (e.g., information concerning how one performs a job). The underlying mechanism for the effects of outcome feedback is an increase in effort, which leads to an increase in performance (Locke & Latham, 1990). Some researchers have determined that outcome feedback can increase performance not only for the individual but also for a team, especially when it is combined with goal setting (Kluger & DeNisi, 1996; Neubert, 1998). On the contrary, process feedback not only focuses on task-related information but may also involve interpersonal behaviors (i.e., relationship or motivational feedback; Earley, Northcraft, Lee, & Lituchy, 1990; McLeod, Liker, & Lobel, 1992). The role of feedback is reflected in performance management as the communication process, which consists of information provided to an individual on how he or she can improve performance (Larson, 1989). Researchers have suggested that goal setting and feedback have an interactive relationship because individuals can be aware of their performance improvement and gauge the level of effort required to pursue a goal effectively (Earley et al., 1990; Locke & Latham, 1990; Neubert, 1998). Therefore, feedback can serve as a reward system and motivate performance while also acting as a cue to regulate behavior appropriately.

In the organizational setting, to increase employee cooperative behaviors and improve employee performance during the evaluation process, it is better for employees to reach out to supervisors or coworkers and request assistance and advice. Similarly,

employees should be willing to tailor their behavior to fit the demands of a particular environment and share information with others. Consequently, it is necessary to consider two significant aspects of feedback: (a) feedback of performance information and (b) discussion of an individual's performance (Clark, 2005). When employees obtain more performance information and discuss their performance with their supervisors, they are likely to cooperate with others to succeed in their work environment (Katzenbach & Smith, 1993). Based on these discussions, two hypotheses can be made.

Hypothesis 4 (H4): Performance information that the employees receive has a positive relationship with employee cooperative behavior.
Hypothesis 5 (H5): Performance discussion that the employees have with the superior has a positive relationship with employee cooperative behavior.

Trust in leadership. Trust in leadership is essential for the perception of fairness and positive implications of any management practices. Perceptions of the leader's character may affect an employee's vulnerability in a hierarchical relationship. Specifically, because leaders have the authority to make decisions that have a significant impact on the employee (e.g., promotions, pay, work assignments, layoffs), perceptions about the trustworthiness of the leader become important (Dirks & Ferrin, 2002). Employees may thus have a reason to cooperate with the leaders to maximize their personal outcomes. The dilemma regarding whether or not employees cooperate creates a sense of uncertainty and risk, and to reduce such perceived uncertainty and risk employees tend to increase the predictability of their leaders' actions by rationally considering their prior experiences with the leaders or by seeking evidence from others (Molm, Schaefer, & Collett, 2007). In so doing, employees make attributions about a leader's characteristics, for example integrity, dependability, and ability that influence their sense of vulnerability in a hierarchical relationship (Zhu & Akhtar, 2014). That is, leaders may perform transformational leadership behaviors, including articulating an appealing goal and ensuring goal clarity, displaying unconventional behaviors, such as their reliability, integrity, and ability, inviting employees to contribute to decision making (Bass, 1999), and working together.

Trust in the leadership also reduces feelings of uncertainty and solves problems caused by a lack of information. For example, Moynihan and Pandey (2010) found that leadership is a key factor in understanding uses of performance information. Other studies identify that performance management programs can secure the support of top leaders (Ayers, 2013; Wang & Berman, 2001). Public employees who trust their leadership are more likely to cooperate; thus, we formulate the following hypothesis:

Hypothesis 6 (H6): An employee who trusts his or her leader has a positive relationship with employee cooperative behavior.

Between-organization-level predictors

Strategic communication. Vertical strategic alignment can lead to better performance; different levels of alignment can have a critical influence on strategy (Andrews et al.,

2012). The goal-oriented context of public settings has forced the U.S. federal government to adopt performance management to improve organizational effectiveness (Moynihan, 2005). As the federal government adopts reforming strategies, individual performance is clearly linked with the objectives outlined by the organizational mission (Joyce, 2003). Public managers must then translate these objectives into hierarchical levels of the organization and link individual employee cooperation to the organizational mission and strategic plan. When an organization conveys common goals and sets specific objectives for its members, these members can communicate more effectively with each other, enabling organizational members to develop cooperative behavior that can be reached at a reasonable cost (Levitt & March, 1995). The research confirms regular management communication as the largest predictor of goal alignment (Ayers, 2013). To achieve this understanding, managers need to align the work of individuals and units to support the priorities of the organization. Therefore, we hypothesize the following:

Hypothesis 7 (H7): Strategic communication of organizational goals to top management has a positive relationship with employee cooperative behavior after individual-level predictors are controlled.

Performance culture. The agency theory proposed involves designing a reward system tied to results as a function of performance. Results-oriented organizations offer several advantages because reliable and valid performance indicators are set to motivate and enable organizational members to work harder and move more progressively toward what is measured, enhancing individual cooperation and contributing to organizational performance. Accordingly, a results-oriented organization translates these reward schemes into the actions of employees within that organization, thus influencing their behavior, attitudes, and performance (Kerr & Slocum, 2005). The most important outcome is to affect the pace at which work is done and change the culture to obtain performance by rewarding preferred practices; these results can affect the success of an organization in meeting its goals. In a performance culture, employees may prefer to cooperate because they have aligned goal performance and the desire for a reward. For these reasons, we propose the following hypothesis:

Hypothesis 8 (H8): An organizational performance culture has a positive relationship with employee cooperative behavior after individual-level predictors are controlled.

PFP. The principal–agent theory emphasized incentives to induce the agents' efforts and control their behaviors (Miller & Whitford, 2002). PFP is commonly used to connect financial incentives with individual performance and involves increased clarity in setting goals and a careful review process. The intelligent design of PFP is essential to avoid the pitfalls evident among traditional compensation systems. For example, a traditional pay base and increase are followed by tenure, which is not directly related to performance. Conversely, PFP reflects the widespread belief that employees should be rewarded in proportion to their contributions.[4] Researchers have

discovered two PFP processes (Cadsby, Fei, & Tapon, 2007; Gerhart & Rynes, 2004): the incentive effect and the sorting effect. In the former, PFP primarily influences employee performance. The latter is consistent with the concept of person–organization fit and highlights the attributes of the workforce by matching the dispositions of job applicants.

A well-designed PFP can produce more competitive, adaptable, and collaborative organizations and is dependent on organizational conditions and how they are linked. The PFP may produce different sorting effects on individual outcomes. For example, empirical studies have found a negative relationship between PFP and intrinsic motivation in public organizations (Kellough & Lu, 1993; Perry et al., 2006; Weibel, Rost, & Osterloh, 2010). PFP can thus make individuals single-minded and inflexible regarding performance, meaning it has the potential to undermine cooperation and workplace cohesion:

Hypothesis 9 (H9): The PFP system that the organizations adopt has a negative relationship with individual cooperative behavior after individual predictors are controlled.

Performance-based accountability. Within the context of incentive alignment, performance-based accountability helps to induce the agent to take costly actions in the interests of the principal (Miller & Whitford, 2002). An awareness of this performance evaluation and sanction is the basis for accountability mechanisms in the organizational context (Tetlock, 1992). For public organizations, accountability captures the extent to which governments are required or expected to justify their decisions and actions with regard to the policy-making process and resource distribution to stakeholders (Heinrich, 2002). Accountability implies sanctions and redress for employee conformity with organizational standards or a control system (Ferris, Mitchell, Canavan, Frink, & Hopper, 1995). In the policy-making process, decision makers need to respond to beliefs about stakeholder preferences. As accountability is a fundamental consideration in interpersonal interactions, it can increase the likelihood of dominant responses. In this view of accountability, employees can adopt forceful opinions when working with others to please their superiors and confirm organizational goals.

Hypothesis 10 (H10): Performance-based accountability held by organizations has a positive relationship with employee cooperative behavior after individual-level predictors are controlled.

Research Design

Data and Samples

Individual-level variables came from the 2010 Federal Human Capital Survey (Federal Employee Viewpoint Survey [FEVS]), a self-administered web survey for

federal employees conducted by the U.S. Office of Personnel Management (OPM; 2010). The responding scales of these data were recoded from 1 (*strongly disagree*) to 5 (*strongly agree*) in this survey. Data were also gathered to measure organizational-level characteristics. FHRD included objective information for each organization on employment characteristics, while organizational size and racial diversity were measured using the 2010 FHRD published on the official website of the Federal Employment Statistics (OPM, 2010). This report was used to gather information on the adoption and implementation of PFP systems within federal agencies during 2008 in this study. After 2008, there was incomplete information about adopting the PFP system for each organization. In addition, as we need to consider time effects subsequently adopting PFP, it became necessary to focus on 2010 FEVS data rather than 2008 FEVS data. After removing incomplete data for our variables of interest, around 150,000 employees working across 194 agencies[5] were used in our final analysis.[6]

Most survey items were based on the FEVS, which relies on self-reporting. In self-reported data, common method variance (CMV) is more likely to occur (Meier & O'Toole, 2013). Because the FEVS is the secondary data source, we were unable to conduct most of the ex ante procedural remedies to reduce CMV, for instance, increasing respondents' motivation to answer correctly and precisely. Although no research using FEVS data has adopted ex ante and ex post remedies to lessen and detect CMV, several studies have been published based on the FEVS data, demonstrating its validity and reliability.[7] For other procedure remedies, this study adopted multiple subjective and objective data sources for which steps were taken to ensure the data would not drive the variables and to correct for potential CMV (Andersen, Heinesen, & Pedersen, 2016; Favero & Bullock, 2015; George & Pandey, 2017; Jakobsen & Jensen, 2015; Meier & O'Toole, 2013; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). For ex post statistical analyses, several studies have stated that there is no optimal way to sufficiently evaluate the risk of common method bias by statistical methods, such as Harman's single factor test, the unmeasured latent method factor technique, or the confirmatory factor analysis (CFA) marker (Jakobsen & Jensen, 2015). Therefore, this study includes a nonlinear interaction term in the model because our hypothesized relationships are not part of the respondents' theory-in-use, the theoretical framework direct design and method, and the studies suggested (Fernandez, Resh, Moldogaziev, & Oberfield, 2015; George & Pandey, 2017; Jakobsen & Jensen, 2015).

Table 1 shows the demographic and personal attributes of federal employees as well as agency information. Among the federal employees, 54.54% were male and 69.38% had nonsupervisory status. Nearly a third (31.99%) were racial minorities. Their ages were 40 to 49 (29.96%) and 50 to 59 (37.96%). Job tenure in their agency was either more than 20 years (29.90%) or from 11 to 20 years (24.22%). Around 33% of the agencies adopted a PFP system.

Measurement

Employee cooperative behavior. The dependent variable that was used to investigate the hypotheses is employee cooperative behavior. Our cooperative employees are

Table 1. The Demographic Information of Employee in the Federal Government.

Employee information(N = 151,783)			
	Category	Frequency	Percent
Supervisory	Yes	46,479	30.62%
	No	105,304	69.38%
Gender	Male	82,775	54.54%
	Female	69,008	45.46%
Race	Minority	48,559	31.99%
	Majority	103,224	68.01%
Age	26-29	7,123	4.69%
	30-39	21,751	14.33%
	40-49	45,481	29.96%
	50-59	57,610	37.96%
	60 or older	19,818	13.06%
Pay category	Federal wage system	5,814	3.83%
	GS 1-6	67,969	44.78%
	GS 7-12	67,315	44.35%
	GS 13-15	10,685	7.04%
Job tenure	Less than 1 year	2,627	1.73%
	1 to 3 years	22,757	14.99%
	4 to 5 years	14,189	9.35%
	6 to 10 years	30,073	19.81%
	11 to 20 years	36,761	24.22%
	More than 20 years	45,376	29.90%
Agency information (N = 194)			
Adoption of PFP	Yes	72	33.03%
	No	146	66.97%
Overall racial diversity in the agency	*M*	0.47	
Agency size	*M*	7.6	

Note. GS = General Schedule; PFP = pay-for-performance.

individuals who work with others on joint projects and who combine their strengths and knowledge to accomplish a set of goals (Wagner, 1995). We have included two items (i.e., cooperate to get job done, share job knowledge with each other) to measure this variable with a Cronbach's $\alpha = .73$, shown in the appendix.

Within-organization explanatory variables. *Performance appraisal* was defined as the employees feeling satisfied with the process by which the organization evaluates their performance to gain an insight into their potential for growth and development (Murphy & Cleveland, 1995). This variable is reflected by two items with a Cronbach's $\alpha = .82$: fair performance appraisal, understanding different performance levels.

Performance information consists of the available facts that enable employees to understand the organization's expectations of them and helps them improve job performance (Kluger & DeNisi, 1996). This variable is reflected by two items with a Cronbach's $\alpha = .68$: enough information, satisfactory management information in your information.

Performance discussion with supervisor. Organizations usually need to provide performance feedback on a frequent and regular basis, and consequently discussion about performance with the supervisor involves employees who understand issues and react to problems as soon as possible by discussing them with their supervisors (Larson, 1989). This variable includes two items, with a with a Cronbach's $\alpha = .77$: worthwhile discussion with my supervisor, my supervisor talked with my performance recently.

Goal setting. In accordance with the principal–agent relationship, individuals are goal-oriented and driven by their values, desires, and purposes. The variable of goal setting thus indicates the degree to which employees understand an organization's goals and the means to accomplish them, measured by two items (i.e., job expectation, organizational goals and priorities) with a Cronbach's $\alpha = .68$.

Trust in leadership. We also included trust in leadership as an explanatory variable, which served as the foundation for willingness to cooperate. Based on Yang and Kassekert (2010), five items measure this variable with a Cronbach's $\alpha = .90$. The sample statements include "My supervisor/team leader treats me with respect" and "I have trust and confidence in my supervisor." The appendix contains the Cronbach's alpha for each scaled variable and all values appear reasonable.

Between-organization explanatory variables

Strategic communication. The strategic communication variable involves managers who strategically communicate employee expectations. When they have specific goals, managers can easily measure progress toward organizational goal completion (Dansereau & Markham, 1987; Mohr & Nevin, 1990). The appendix demonstrates that three survey items were used to measure this variable with a Cronbach's $\alpha = .91$: communicating the goals and priorities, progress, and different work units.

Performance culture. The development of a performance culture is designed to encourage high performance and establish specific standards of performance at all levels of the organization (groups and individuals). This study uses three items to measure this variable with a Cronbach's $\alpha = .84$, including three performance criteria of promotion, award, and pay.

Performance-based accountability has been defined earlier as the presence of sanctions in evaluations and redress for conformity to organizational standards or a control system (Ferris et al., 1995). Three survey items were used to measure this variable with a Cronbach's $\alpha = .71$: accountable for results, evaluating poor performer, and differentiate performance in a meaningful way.

Pay for performance. To measure PFP, we assessed the adoption of PFP by federal agencies to improve the strategic management of human capital and more effectively compete for and retain talent (Gerhart & Rynes, 2004). The binary variable served as a justifiable proxy for PFP.[8]

Within- and between-organization control variables. We included control variables at two levels to rule out alternative explanations in our model. At the within-organization level, we controlled for federal employee age, gender, race, pay category, job tenure, and supervisory status. Training involves the systematic acquisition and development of the knowledge, skills, and attitudes required by employees to work together to perform their job adequately or to improve performance in the job environment (Goldstein, 1980). This study uses two items to measure this variable with a Cronbach's $\alpha = .81$: training needs and the degree of satisfaction regarding training. At the between-organization level, increasing the number of individuals or groups makes it more difficult to make cooperative decisions and reach a consensus. Increasing the number and diversity of participants in the workplace can also easily become an obstacle to cooperation. We thus controlled for both racial diversity[9] and size (i.e., the number of members) within the agency.

Analytical Method

Data were hierarchical with individual employees nested in different agencies within the U.S. federal government. To obtain the correct estimates, we conducted multilevel modeling to test the hypotheses. The key advantage of multilevel modeling is to explicitly account for the nested nature of the data and to estimate the effect of factors at the individual- and organizational levels on our outcome variables while maintaining the appropriate levels of analysis for the predictors (Bryk & Raudenbush, 2002).

The multilevel models could estimate the individual-level effects and the influence of the between-agency level (agency level) on the intercepts and slopes at the within-agency level (individual level). Based on large samples and satisfactory internal agreement on aggregated variables (Bliese, 2000), this study employed multilevel analysis to help detect CMV (Dionne, Yammarino, Atwater, & James, 2002; Kark, Shamir, & Chen, 2003). We examined the group agreement of the constructs formed via aggregation, including three organization-level variables from the FEVS survey data. All evidence indicated that individual responses to strategic communication with organizational goals, performance culture, and performance-based accountability could be aggregated at the agency level.[10]

Findings

Descriptive Statistics and Correlations

Table 2 presents the descriptive statistics, reliabilities, and correlations of all variables. As stated above, individual and agency-level continuous predictors yielded sufficient

Table 2. Descriptive Statistics and Correlations of Individual-level ($N = 183{,}902$) and Agency-Level ($N = 194$) Continuous Variables.

Individual-level variable	*M*	*SD*	Range	1	2	3	4	5	6	7	8	9	10	11
Employees' cooperative behavior (1)[a]	3.86	0.87	1-5	(.73)										
Performance appraisal (2)[a]	3.73	1.06	1-5	.39***	(.82)									
Performance information (3)[a]	3.62	0.89	1-5	.52***	.53***	(.68)								
Performance discussion with supervisor (4)[a]	3.87	0.96	1-5	.46***	.64***	.57***	(.77)							
Trust in leadership (5)[a]	3.88	0.93	1-5	.54***	.63***	.67***	.73***	(.90)						
Goal clarity (6)[a]	4.09	0.77	1-5	.45***	.51***	.64***	.50***	.57***	(.68)					
Training (7)[a]	3.45	1.02	1-5	.46***	.53***	.66***	.57***	.60***	.52***	(.81)				
Strategic communication (8)[a]	3.56	0.18	2.65-4.11	.13***	.09***	.17***	.10***	.13***	.10***	.16***	(.91)			
Performance culture (9)[a]	3.08	0.13	2.32-3.65	.11***	.10***	.14***	.10***	.11***	.09***	.15***	.72***	(.84)		
Performance-based accountability (10)[a]	3.42	0.15	2.86-3.85	.12***	.10***	.15***	.10***	.12***	.10***	.16***	.70***	.71***	(.71)	
Overall racial diversity in an agency (11)[b]	0.48	0.09	0.09-0.68	−.01***	.01**	.01**	−.01**	−.01*	.01**	.01**	−.07***	−.07***	−.06***	
Agency size (12)[c]	7.80	1.67	2.48-12.52	.02***	.02***	.03***	.02***	.03***	.02***	.05***	.19***	.22***	.25***	−.11

Note. Cronbach's alpha in parentheses.

[a]Indicates that mean from 1 = *strongly disagree* to 5 = *strongly agree*.

[b]Agency diversity for each agency tap to agency size (i.e., numbers of members).

*$p < .05$. **$p < .01$. ***$p < .001$.

[c]*$p < .05$. **$p < .01$. ***$p < .001$.

reliability and validity.[11] *These variables followed normal distributions without serious skewness. In addition*, the possibility of multicollinearity was not a threat as no variables were strongly correlated to each other (i.e., no maximum correlation greater than .85). Moreover, the correlations between the variables were smaller than .85, thus demonstrating their discriminant validity (Kline, 2010).

The Results of Multilevel Modeling

Null model. The null model was examined to justify the two-level data analysis. As shown in Table 3, there was a significant result regarding the agency variance in Model 1 ($\gamma_{00} = 0.14$, $p < .001$). An ICC indicated that a small but significant influence existed at the agency level (i.e., ICC = 3.04%, calculated by Stata 14.1); that is, 96.96% variance of employee cooperation existed in the employee level.[12] When small ICCs are present, some researchers suggest considering the design effect, which is a function of both the ICC and the average cluster size (Muthén, 1994; Muthén & Satorra, 1995).[13] In this case, the design effect is approximately equal to 24.75, larger than 2,[14] supporting the finding that a multilevel model offers more precise estimates than single-level techniques such as ordinary least squares (OLS) regression. Previous research has also revealed this small number of meaningful differences in the federal government (Kim & Schachter, 2013; Yang & Kassekert, 2010). Therefore, the application of multilevel modeling is appropriate to test our hypotheses.

Within-agency level model. As specified in Table 3, the results of adding an individual-level factors model demonstrated that all five hypotheses are supported. The respondents with a higher level of goal clarification in the goal setting tended to have a positive linear relationship with cooperative behavior (coefficient = .13, $p < .001$), consistent with Hypothesis 1. With respect to Hypothesis 2, the findings showed that individual employees were unwilling to work together if they perceived high-level satisfaction with the performance appraisal. However, the quadratic variable of performance appraisal displayed a significant positive association with individual cooperation, suggesting that the relationship reached a point of inflection after which further decreases were not apparent. The U-shape pattern demonstrates the relationship between performance appraisal and outcome variable, which supports Hypothesis 3. Hypotheses 4 and 5 suggested that both performance information and performance discussion with supervisors were positively related to individual cooperation. The results suggested that federal employees were more willing to engage in a higher level of cooperative behavior when they felt more satisfied with performance information (coefficient = .18, $p < .001$) and discussed performance with their supervisors more often (coefficient = .01, $p < .01$), meaning they were willing to engage in a higher level of cooperative behavior. This result also suggested that a moderate level of trust in their leadership may be associated with a higher level of employee cooperation (coefficient = .25, $p < .001$), supporting Hypothesis 6.

Regarding the control variables, the respondents with supervisory status (e.g., team leaders, managers, executives) who were male, older, and who have worked longer in

Table 3. Multilevel Analysis Results of Employees' Cooperative Behaviors in the Federal Government.

Fixed effect	Null model	Within-agency model	Between-agency model
Within-agency variable			
Goal clarity (H1)		0.13*** (0.003)	0.13*** (0.003)
Performance appraisal (H2)		−0.02*** (0.002)	−0.02*** (0.003)
Performance appraisal^2 (H3)		0.01*** (0.001)	0.01*** (0.001)
Performance information (H4)		0.18*** (0.003)	0.18*** (0.003)
Performance discussion with supervisor (H5)		0.01** (0.003)	0.01* (0.003)
Trust in leadership (H6)		0.25*** (0.004)	0.25*** (0.004)
Training		0.09*** (0.002)	0.09*** (0.002)
Supervisory status (*supervisory* = 1, *employee* = 0)		0.06*** (0.004)	0.05*** (0.004)
Gender (*male* = 1, *female* = 0)		0.08*** (0.004)	0.08*** (0.004)
Minority (*majority* = 0, *minority* = 1)		−0.07*** (0.004)	−0.07*** (0.004)
Age		0.01*** (0.002)	0.01*** (0.002)
Pay category		0.04*** (0.003)	0.04*** (0.003)
Job tenure		0.01*** (0.001)	0.01*** (0.002)
Between-agency variable			
Strategic communication (H6)			0.38*** (0.05)
Performance culture (H7)			0.17** (0.07)
Pay-for-performance (*yes* = 1, *no* = 0; H8)			−0.02 (0.01)
Performance-based accountability (H9)			0.13 (0.10)
Overall racial diversity in an agency			−0.08 (0.05)
Log of agency size			−0.002 (0.003)
Intercept	3.87*** (0.01)	3.64*** (0.01)	3.69*** (0.04)
Random effects			
Organization residual	0.14* (0.01)	0.13 (0.007)	0.07 (0.005)
Individual-level residual	0.86 (0.001)	0.69 (0.001)	0.69 (0.001)
ICC within agencies	96.96%		
ICC between agencies	3.04%		
R^2 within agencies		35.38%	35.38%
R^2 between agencies		.05%	74.48%
Deviance	384,689.17 (*df* = 3)	318,482.38 (*df* = 16)	318,263.52 (*df* = 22)
Number of observations	151,783	151,783	151,783
Number of agencies	194	194	194

Note. Standard error in parentheses H1 to H9 = Hypotheses 1 to 9.
*$p < .05$. **$p < .01$. ***$p < .001$.

their agency as well as those with a higher level of pay and more training appeared to be positively associated with individual cooperation. Conversely, employees who were in the minority tended to have a negative relationship with cooperative behavior.

Between-agency model. Based upon both the between-individual and between-agency models, R^2 in Table 3 explained 35.38% of the within-agency variance and 74.48% of the between-agency variance. As shown in the between-agency model in Table 3, the results of the individual-level predictors were similar to those attained in the within-agency model. The same variables maintained their significant influence on cooperative behavior, and therefore Hypotheses 1, 2, 3, 4, 5, and 6 were supported. For agency-level predictors, the findings regarding Hypothesis 7 indicated that the aggregated strategic communication with organizational goals showed a positive direction with significant levels (coefficient = .38, $p < .001$) even after individual-level variance was controlled for. The results for Hypothesis 8 revealed that performance cultures had a positive association with employee cooperation (coefficient = .17, $p < .01$). However, the finding for Hypothesis 9 was negative and nonsignificant, indicating that the adoption of PFP had adverse effects on individual cooperation. Finally, for Hypothesis 10, the results demonstrated that an agency with high levels of performance-based accountability had a positive but nonsignificant influence on individual cooperation. At the between-organizational level, while the variables of overall racial diversity and organizational size had negative signs, both magnitudes were insignificant. Based on the results, all individual-level hypotheses were significantly supported (H1, H2, H3, H4, H5, H6), but only two organization-level hypotheses were verified (H7, H8).

Furthermore, we expect to understand the multilevel relationships between an agency performance culture, individual performance appraisal, and individual cooperative behavior as mixed significant results are indicated by Table 3. Figure 1 illustrates the relationships between individual performance appraisal and an agency performance culture in terms of individual cooperative behavior, with a 95% confidence level. The left side of this figure indicates that, predominantly, with the presence of an agency performance culture, a low level of individual performance appraisal has a greater influence than a high level of individual performance appraisal on individual cooperative behavior. However, the right side of this figure demonstrates that each unit of performance appraisal square in the high level will increase the level of individual cooperative behavior compared with those in the low level under an agency performance culture. This figure demonstrates that, under an agency performance culture, individual performance appraisal has antagonistic effects on individual cooperative behaviors; however, with more emphasis on performance appraisal, there will be beneficial effects in terms of cooperation.

Discussion and Managerial Implications

The results corroborated most of our hypotheses. In support of our conceptual model, we have discovered that federal managers can exert a positive relationship with cooperative behavior through performance practices and, consequently, employees are more willing to work together if they have clear goals. With respect to performance appraisal, a curvilinear U-shape was found when performance appraisals had a negative relationship with cooperative behavior up to a certain point, after which this relationship became positive. This implies that although performance appraisal may have

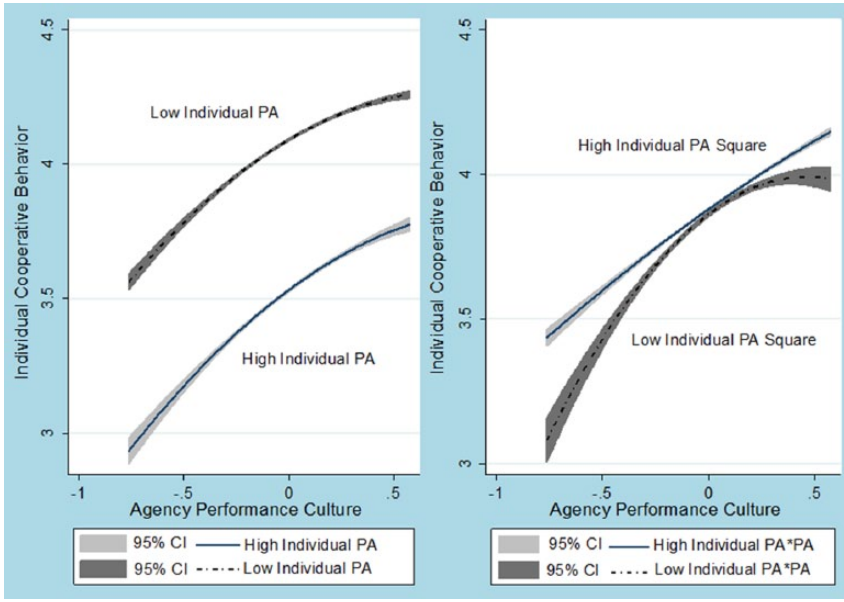

Figure 1. The relationships between individual performance appraisal and agency performance culture in terms of individual cooperative behavior with a 95% confidence level.
Note. PA = performance appraisal.

a negative sorting relationship with individual cooperation at the early stage, it will positively accelerate cooperative behaviors during the later stage. Federal employees would like to obtain performance information that can augment the positive relationship with individual behavior regarding cooperation, while speaking with superiors about performance can also strengthen cooperation in this environment. Individual cooperative behavior was accentuated by performance cultures; this may, however, be attenuated by the adoption of PFP, though not significantly. This result implies that strategic communication could have a substantial association with employees rather than a merely symbolic meaning.

Notably, performance culture is currently a prevalent topic in government reform as governments are trying to determine how to achieve more with less. We examined the federal workforce to determine whether organizational reward practices can encourage more cooperation and the results reveal that performance cultures can reduce the possibility of uncooperative phenomena. In addition, the relationship between individual performance appraisal and cooperative behaviors is intensified (Figure 1). This developmental curve reflects the progression of learning processes toward work environment as an employee develops more advanced knowledge structures in the standard operating process of his or her job, agency rules, and regulations, for instance, performance appraisal law (Baylor, 2001). A positive encouragement

and reward climate can heighten motivation by ensuring the unobservable behaviors and assessment system are more visible. Thus, if the federal government can create a performance culture and change the way things have always been done, then employees can also do things differently to work with others and accomplish common goals (Kerr & Slocum, 2005).

Nevertheless, although the results had a negative sign, PFP did not illustrate a significant association with individual cooperation in our data, which partially corroborates previous research. For example, previous findings have demonstrated that the potentially harmful effects of PFP can reduce individual motivation and, in turn, individual performance (Kellough & Lu, 1993; Perry et al., 2006; Weibel et al., 2010). Literature on PFP has suggested that this strategy should connect directly to management objectives. To achieve this, the federal government must match measurable and controllable performance targets with established goals. In addition, federal agencies need to offer competitive pay for competitive performance, pay above-market prices for exceptional performance, and pay less for poor performance. Without considering strained fiscal circumstances, the collection of data and outcomes through quantifiable and valid processes and designing fair metrics inevitably creates challenges for the performance appraisal system. This result may be reasonable and may suggest an unfavorable relationship with cooperative behavior without significance.

While the variables of PFP and a performance culture emphasize the accomplishment of organizational goals through pecuniary or material reward, the results depict both directions of the outcome variable differently. Due to the lack of significance in this study's results, we do not have conclusive evidence; however, we can speculate on a possible explanation for the contrasting findings regarding whether PFP can confirm previous studies. Instead, performance culture produces climates in which all members can share in effective processes; as all members realize that working together can be more productive, it is possible this shared sense will promote employee cooperation. Our findings demonstrated that if public employees perceived an unfair and low level of performance appraisal implementation, they are less willing to work with others. Such uncooperative behavior is obviously exacerbated within a performance culture. In contrast, a performance culture can have positive relationship with employee cooperation behavior when public employees are more aware of the execution and fairness of a performance appraisal. Therefore, the results appear to highlight the significance of designing an appropriate performance appraisal and making it distinct for public employees. Furthermore, it is worth mentioning that small within-group agreements (i.e., ICC) that describe how strongly individuals in the same agency resemble each other exist in the FEVS data used in other studies (Kim & Schachter, 2013; Yang & Kassekert, 2010); however, this study provides the reasons for statistical bias and evidence of the design effects to justify the adoption of multilevel modeling as opposed to OLS.

The current research has significant implications for practice. We demonstrated that having a clear organizational goal is a cornerstone of individual cooperation. A clearly articulated goal must be able to identify the direction in which an organization needs to move, as well as how the desired actions need to be communicated to reach the desired destination (Ayers, 2013, 2015). Performance appraisal has a nonlinear

relationship with employee cooperation. It should be noted that performance appraisal does not necessarily encourage employee cooperation and often ends up emphasizing punishments rather than positive feedback, especially in rule-driven public organizations. It is a rational response for public employees not to cooperate with others in the traditional system of government incentives; however, performance appraisal is a method of gathering information and sharing loops about employee performance as it can facilitate transparency and discourage uncooperative behavior. From the prisoner's dilemma, employees must either gain important benefits from cooperating or suffer directly from the consequences of failure; therefore, they coordinate their activities to achieve cooperation. For example, employees accomplish the policy goals cooperatively in agencies, and the agency lead will punish noncooperative employees by performance appraisals. This result implies that more interactive processes such as involving public employees in the performance management process are crucial in enhancing the acceptance of performance appraisal. The results serve as a warning to federal agencies that managers who provide performance appraisal need to receive training to evaluate individual performance objectively and effectively. Regular and meaningful performance appraisals are vital because both principals and agents can benefit in terms of productivity and the quality of work. An increasing level of cooperative behavior requires more information and performance feedback from supervisors, and our results imply that supervisors could hold the key to encouraging individual cooperation. The federal government should thus invest in training programs for public managers to equip them with the necessary communication skills. Public managers must strike a balance between giving clear, specific, and descriptive feedback and maintaining a supportive atmosphere. The utility of performance management depends on the ability of public employees to act upon feedback, making these difficult discussions integral to the success of performance management.

The results demonstrate that in combination with reward mechanisms performance cultures can have positive association in work environments where employees are willing to work together. Performance cultures are derived mainly from understanding the relationship between day-to-day contributions and organizational results as well as the existence of meaningful personal relationships among colleagues, managers, and direct reports. When public employees perceive their contributions as significant and are relationally connected to their coworkers, they become more personally concerned with the well-being of their organizations and are more motivated to contribute to collective success. In this regard, public managers could help to develop cooperation by serving as role models and by rewarding desired outcomes.

Conclusion and Research Limitations

This research enhanced the understanding of the role of performance management strategies in the advancement of individual cooperation. This study has responded to the call from human resource management scholars for a fine-grained, multilevel approach to the influence of performance management strategies (den Hartog et al., 2004; DeNisi, 2000). The influence of the cooperative behavior of federal employees,

found to occur frequently in organizational contexts, has generally been left unexplored. We highlighted this research gap using federal employee statistics to provide empirical evidence regarding the relationships of performance management strategies with employee cooperation.

As with other empirical studies, this research has limitations that suggest directions for future research. Some important factors (or omitted variables) such as personality traits, psychological factors (with the exception of trust in leadership), or organizational identification and embeddedness may have a significant influence on cooperation yet were not controlled for in the analytical model. Due to the limitations of FEVS data and research methods, this exploratory research remains parsimonious without involving these variables. In addition, the current data sets also failed to collect information from all agencies and the related components. Future research may include other meaningful predictors, mediators, moderators, or cross-level interactions related to performance management strategies. A valuable extension of this study would be to empirically examine whether intrinsic motivation (e.g., public service motivation) can indeed serve as a mediator between performance management strategies and individual cooperation. Because of the research requirement, we aggregated individual survey responses to the agency-level variables, for instance, strategic communication with organizational goals, performance culture, and performance-based accountability. However, this may mean that some meaningful individual-level variances have been overlooked.

Although we have drawn on social psychological theory, the prisoner's dilemma and social dilemma, principal–agent theory, and social capital to interpret the multilevel effects of individual cooperation, additional theories may provide alternative explanations. For example, from a justice perspective, organizational members may feel unwilling to work together if they believe they are the recipients of unfair treatment from their superiors (Colquitt, 2001). Our research could be extended to obtain a further understanding of the influence of performance management strategies on individual cooperation by examining whether the role of the perception of justice is either mediating or moderating.

In addition, successful implementation of PFP depends on objective measurements to determine which specific individuals are better off (Cadsby et al., 2007; Gerhart & Rynes, 2004). Unlike in the private sector, within a public organization it is difficult to measure individual performance. Subjective evaluation, which is similar to performance appraisal, may be perceived negatively among public employees (Perry, Trent, & Jun, 2009; Weibel et al., 2010) as PFP signifies only exceptional individual performance. Finally, performance management strategies require effective implementation over time to connect what organizational members know (performance information) with what they do. This study has only addressed the relationship between performance management practices and employee cooperation using cross-sectional figures from the FEVS data. Another valuable extension of our research would be to detect longitudinal data or panel data to understand how to change or maintain the behavior of public employees.

Appendix

Measurement and Scale Properties from 2010 Federal Human Capital Survey

Individual employee level

Employees' cooperative behavior (*Cronbach's* $\alpha = .73$)

20. The people I work with cooperate to get the job done.
26. Employees in my work unit share job knowledge with each other.

Performance appraisal (*Cronbach's* $\alpha = .82$)

15. My performance appraisal is a fair reflection of my performance.
19. In my most recent performance appraisal, I understood what I had to do to be rated at different performance levels (for example, Fully Successful, Outstanding).

Performance information (*Cronbach's* $\alpha = .68$)

2. I have enough information to do my job well.
64. How satisfied are you with the information you receive from management on what's going on in your organization?

Performance discussion with supervisor (*Cronbach's* $\alpha = .77$)

44. Discussion with my supervisor/team leader about my performance are worthwhile.
50. In the last six month, my supervisor/team leader has talked with me about my performance.

Goal setting (*Cronbach's* $\alpha = .68$)

6. I know what is expected of me on the job.
12. I know how my work relates to the agency's goals and priorities.

Trust in leadership (*Cronbach's* $\alpha = .90$)

43. My supervisor/team leader provides me with opportunities to demonstrate my leadership skills.
48. My supervisor/team leader listens to what I have to say.
49. My supervisor/team leader treats me with respect.
51. I have trust and confidence in my supervisor.
61. I have a high level of respect for my organization's senior leaders.

Training (*Cronbach's* $\alpha = .81$)

18. My training needs are assessed.
68. How satisfied are you with the training you receive for your present job?

**Agency-level variables*

Strategic communication (*Cronbach's* $\alpha = .91$; ICC1 = 0.034, ICC2 = 0.96, $F = 26.80$, $p < .001$, $R_{wg} = 0.71$)

56. Managers communicate the goals and priorities of the organization.
57. Managers review and evaluate the organization's progress toward meeting its goals and objectives.
58. Managers promote communication among different work units (for example, about projects, goals, needed resources).

Performance culture (*Cronbach's* $\alpha = .84$; ICC1 = **0.035**, ICC2 = 0.97, $F = 28.73$, $p < .001$, $R_{wg} = 0.72$)

22. Promotions in my work unit are based on merit.
25. Awards in my work unit depend on how well employees perform their jobs.
33. Pay raises depend on how well employees perform their jobs.

Performance-based accountability (*Cronbach's* $\alpha = .71$; ICC1 = 0.028, ICC2 = 0.96, $F = 23.47$, $p < .001$, $R_{wg} = 0.70$)

16. I am held accountable for achieving results.
23. In my work unit, steps are taken to deal with a poor performer who cannot or will not improve.
24. In my work unit, differences in performance are recognized in a meaningful way.

Declaration of Conflicting Interests

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Notes

1. This study uses cooperation rather than collaboration to assess employee behavior. In public administration, Gray (1989) points out that both cooperation and coordination may occur as part of the early process of collaboration and collaboration represents a longer term integrated process including the search for solutions for problems and the implementation of those solutions on a joint basis. Collaboration is a process in which autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together; it is a process involving shared norms and mutually beneficial interactions (Thomson & Perry, 2006). In political science, the study sees collaboration as another form of cooperation that occurs when people organize themselves into groups that compete with each other in the interests of competition (Axelrod, 1997). Cooperation involves reciprocities, exchange of resources. For example, they may use TIT FOT TAT strategies to achieve cooperation based upon reciprocity (Axelrod, 1997).
2. There are four steps in performance management: (a) performance planning (identification of performance goals, confirmation of performance accountability, and setting performance indicators or performance agreement), (b) performance execution (execution and accomplishment of performance goals), (c) performance assessment (organizational performance measurement, individual performance appraisal), and (d) performance review and feedback (Berman, 2006).
3. Job embeddedness has three components, including fit, links, and sacrifice: (a) Fit means an employee's "perceived compatibility or comfort level" with the organization and surrounding environment, (b) links indicates the number of connections (formal or informal) that a person has with the surrounding community and the organization itself,

and (c) sacrifice identifies the "perceived cost of material or psychological benefits that may be forfeited from broken links with the organization and/or community by leaving a job" (pp.1104-1105) (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001; Reitz & Anderson, 2011).

4. Most studies involving PFP (Perry, Debra, & Laurie, 2006) and those that have employed meta-analyses (Jenkins, Gupta, Gupta, & Shaw, 1998; Weibel, Rost, & Osterloh, 2010) have revealed similar findings, suggesting that PFP can improve performance moderately to significantly in public, private, and nonprofit organizations.
5. According to the U.S. Office of Personnel Management's definition, agencies are summarized into four categories: Cabinet Level Departments, Large Independent Agencies (1,000 or more employees), Medium Independent Agencies (100 to 999 employees), and Small Independent Agencies (less than 100 employees). Retrieved June 15, 2017 from https://www.fedscope.opm.gov/datadefn/index.asp#agency.
6. The potential for multiple imputation (MI) may improve the validity of the research results and prevent wasted resources caused by missing data. However, it is important to be aware of problems that can occur in MI, such as nonnormally distributed variables, the plausibility of missing at random assumption, and missing data that are not random (Sterne et al., 2009; White & Carlin, 2010). Therefore, we have eliminated missing cases from the analysis to avoid the possible bias and inefficiency resulting from MI.
7. The FEVS was conducted every 2 years from 2002 to 2010 and every year since 2011. More question items were either added or significantly revised from 2008 to 2010. Public management researchers have generated plenty of peer-reviewed publications based on the FEVS data (Fernandez, Resh, Moldogaziev, & Oberfield, 2015). The 2010 FEVS was one of the most commonly used (e.g., Bertelli, Mason, Connolly, & Gastwirth, 2015; Caillier, 2013; Fernandez & Moldogaziev, 2013, 2015; Ko, Hur, & Smith-Walter, 2013; Oberfield, 2014; Sabharwal, 2015), indicating a valid and stable data source. In addition, considering the availability of other matched FHRD data, we decided to use the 2010 FEVS.
8. This variable is extracted from 2008 Federal Human Resource Data (FHRD) whose related information was described in the section "Data and Samples."
9. To calculate agency diversity for each agency, we created an overall racial diversity measure based on Blau's index. Overall racial diversity = 1 – ([Black/total]^2 + [White/total]^2 + [Hispanic/total]^2 + [Others/total]^2])
10. Following James, Demaree, and Wolf (1984), we estimated the index of the between-group agreement by computing R_{WG} (j), which was adjusted for a slight negative skew in the expected variance. The results demonstrated that the mean value was 0.71 for strategic communication, 0.72 for performance culture, and 0.70 for performance accountability. All variables were 0.7, which suggests a better fit to the data (Hater & Bass, 1998). It was crucial to conduct an ANOVA to discover the between-groups variance for both variables. Furthermore, we obtained ICC1 and reliability of group mean (ICC2; i.e., strategic communication [0.034, 0.96], performance culture (0.035, 0.97)). These values were acceptable to the median values of ICC1 and ICC2 at the aggregated constructs (i.e., ICC1$>$0.57, ICC2$>$0.70; Bliese, 2000). Although the ICC1 values of these three variables were lower than the cut point, the ANOVA results highlighted significant differences for these variables among departments (strategic communication: $F = 26.80$, $p < .001$; performance culture: $F = 28.73$, $p < .001$; performance-based accountability: $F = 23.47$, $p < .001$). As indicated above, there were sufficient R_{WG} for these variables.
11. We divided the summated rating scales by the number of survey items, which produced the means of each continuous variable (Aiken, West, & Reno, 1991). The means of

individual-level predictors fell between 3.45 and 4.09 without serious skewness, indicating that these variables were normally distributed because the ratio was between −2 and +2. The means for strategic communication, performance-oriented culture, overall racial diversity in an agency, and agency size were 3.17, 3.59, 0.48, and 7.78, respectively.

12. ICC represents the percentage of the total between-group variance in the dependent variable (Bryk & Raudenbush, 2002). There is no absolute cutoff point for what suitable variance in the outcome variable might be. It depends on the outcome under consideration, the size of the organization-level sample. When clusters and nontrivial ICCs are present, the OLS regression assumption of independent errors resulting from simple random sampling will likely be violated. Ignoring the effects of clustering results in smaller standard error and an increased likelihood of finding more significant parameters in the model, which makes Type I errors (Heck & Thomas, 2015).
13. A design effect quantifies the extent to which the sampling error present in sampling individuals in a sampling design departs from the sampling error that would be expected under simple random sampling (Heck & Thomas, 2015). The design effect: (1 + [average cluster size −1] × intraclass relationship).
14. The design effect: (1 + [151,783/194 − 1] × 0.0304) = 24.75. Our cases did not support Muthén's assertion that approximate design effects of less than 2.0 do not appear to result in overly rejection proportions at $p = .05$ for conducting single-level analyses.

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Author Biographies

Kai-Jo Fu is an assistant professor in the Department of Public Administration at the National Chengchi University in Taiwan. Her research interest focuses on the organizational behavior in the public sector, government performance, public value, and citizen involvement. Her works appeared in *Public Administration Review*, *Public Performance and Management Review*, and so on.

Jun-Yi Hsieh is a professor in the Department of Social and Public Affairs at the University of Taipei, Republic of China (Taiwan). His research interest focuses on performance management, local governance, and public human resource management. His works have appeared in *Public Administration Review, Administration and Society, Review of Public Personnel Administration, Public Personnel Management, Public Performance and Management Review, Journal of Urban Affairs* and so on.

Tae Kyu Wang is a research professor at Catholic Kwandong University in Republic of Korea. His research interests include public and non-profit management, human resource management, performance management, and organizational theory and behavior. His works appeared in *Public Personnel Management, Public Performance and Management Review, International Review of Public Administration*, and so on.