

U.S. FEDERAL GOVERNMENT SUPERVISORS' PERCEPTIONS OF PROBLEMS IN
PERFORMANCE APPRAISAL: EXTENT, VARIANCE, AND IMPACTS

by

YU-CHUN LIN

(Under the Direction of J. Edward Kellough)

ABSTRACT

Employee perceptions of performance appraisal processes have received considerable attention in the public management literature, but the views of supervisors who actually conduct the appraisals have received relatively little consideration. This paper addresses that gap in the literature by examining supervisors' perceptions of individual employee performance appraisal in the U.S. federal service in an attempt to identify substantive and procedural problems associated with that system as viewed by those who are responsible for making it work. Five research questions are examined in this study: (1) To what extent do supervisors perceive the performance process as problematic? (2) What aspects of performance appraisal do supervisors in federal agencies see as being most problematic? (3) What factors can explain variation in supervisors' perceptions of the problematic nature of performance appraisal? (4) Are there differences in the aspects of performance appraisal seen as most problematic across agencies? (5) Do agencies where supervisors see performance appraisal as more problematic have employees who have more negative views on performance appraisal? Data are drawn from the Merit Systems Protection Board (MSPB), Merit Principles Survey from 2005 which contained a section asking supervisors to evaluate nine potential problems associated with the process of

evaluation employee performance. Responses indicated that inflated ratings, flawed standards, and a lack of support were the most problematic aspects of the appraisal process. Performance system designs, working locations, positions, age, race, and education levels were significantly associated with supervisors' perception of problems. Supervisors' perceptions of managerial problems and rating standards problems were better than the perceptions of administrative problems and the distributive problems to predict employees' perceptions. The findings suggested that solely improving the design of performance appraisal was not sufficient when the implementation and management of the process were neglected. Authority and support from top management to give supervisors flexibility in the process is crucial to improve implementation and management in the performance appraisal process. Training is necessary when supervisors are granted more flexibility.

INDEX WORDS: employee performance appraisal, performance management, civil service reform, supervisors' perceptions, performance appraisal problems

U.S. FEDERAL GOVERNMENT SUPERVISORS' PERCEPTIONS OF PROBLEMS IN
PERFORMANCE APPRAISAL: EXTENT, VARIANCE, AND IMPACTS

by

YU-CHUN LIN

BA, National Taipei University, Taiwan, 2006

MA, National Chengchi University, Taiwan, 2009

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial
Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2017

© 2017

YU-CHUN LIN

All Rights Reserved

U.S. FEDERAL GOVERNMENT SUPERVISORS' PERCEPTIONS OF PROBLEMS IN
PERFORMANCE APPRAISAL: EXTENT, VARIANCE, AND IMPACTS

by

YU-CHUN LIN

Major Professor:	J. Edward Kellough
Committee:	Hal G. Rainey
	Gene A. Brewer

Electronic Version Approved:

Suzanne Barbour
Dean of the Graduate School
The University of Georgia
December 2017

TABLE OF CONTENTS

	Page
LIST OF TABLES	v
LIST OF FIGURES	vi
CHAPTER	
1 INTRODUCTION	1
2 LITERATURE REVIEW	12
Performance Appraisal and Organizational Performance Management.....	12
How Performance Appraisal Typically Works.....	25
Problems in the Performance Appraisal Process	28
How Problems in Performance Appraisal Affect Employee Perceptions	38
Conclusion	45
3 RESEARCH QUESTIONS AND METHODS	49
Data.....	50
Variables and Methods	54
4 RESULTS	70
Findings.....	70
Discussion	91
5 CONCLUSION.....	111
REFERENCES	120

LIST OF TABLES

	Page
Table 1: Studies Using MSPB 2005 and the Measurements Used	50
Table 2: Research Questions and Methods	55
Table 3: Factor Analysis of Perceived Performance Appraisal Problems	57
Table 4: Descriptive Statistics for Variables in the Models in the Level One Analysis.....	62
Table 5: Variables and Descriptive Statistics of Question Four	63
Table 6: Dependent Variables and Measurements for Question Five	67
Table 7: Problem Index Distribution	70
Table 8: Supervisors' Perceived Problems in Performance Appraisal Processes Index	73
Table 9: Problematic Items by Agencies	77
Table 10: OLS Regression Model.....	81
Table 11: Agency Level Analysis Results	87
Table 12: Impacts on Employee Perceptions (I).....	89
Table 13: Impacts on Employee Perceptions (II)	90
Table 14: Employees' Satisfaction with Performance Appraisal System	93

LIST OF FIGURES

	Page
Figure 1: A Framework for Organizational Analysis	15
Figure 2: Ranking of Problems	75

CHAPTER 1

INTRODUCTION

Formal procedures to assess employee performance are an essential management tool in any organization. The performance appraisal process is the chief mechanism by which supervisors let employees know how well they are doing their jobs, and the results are part of the employment record for each employee. Managers can use performance ratings to inform decisions on a range of critical personnel issues including promotion, training, merit pay, retention, demotion, dismissal, reassignment, and reinstatement (Battaglio, 2015; Daley, 1992). Managers may also use performance appraisal to give employees feedback to enhance their motivation and help them to adjust the way they work to better achieve organizational goals (Ayers, 2015; Ilgen, Fisher, & Taylor, 1979; P. J. Taylor & Pierce, 1999). In short, performance appraisal can have significant impacts on employee performance and organizational effectiveness, and in the context of the public sector, we all have a stake in seeing that it is done successfully.

But if performance appraisal is to be effective as a device through which managers motivate and coach employees, procedures and processes utilized must be accepted by supervisors and their employees (Iqbal, Akbar, & Budhwar, 2015; Levy & Williams, 2004; Longenecker & Nykodym, 1996; Walsh & Fisher, 2005). Earlier work has shown that employee perceptions of performance appraisal hinge on three criteria: purposefulness, fairness/justice, and performance appraisal accuracy (Iqbal et al., 2015). Purposefulness refers to the purpose and uses of performance appraisal; performance

appraisal fairness/justice considers the set of rules and practices that ensure justice in the performance appraisal process; and performance appraisal accuracy refers to elimination of rating errors (Iqbal et al., 2015). Employee perceptions of these three criteria determine their acceptance of performance appraisal. In turn, their acceptance of performance appraisal procedures and outcomes can influence their performance, job satisfaction, and turnover intention (M. S. Taylor, Tracy, Renard, Harrison, & Carroll, 1995; Tremblay, Vandenberghe, & Doucet, 2013).

To promote effective performance appraisal, the Civil Service Reform Act of 1978 (CSRA) required federal agencies to develop carefully devised systems to evaluate employees work performance periodically and objectively (Cayer & Sabharwal, 2016). The evaluation system was to include public employee participation in the establishment of performance standards. Additionally, performance evaluation results were to be used for decision making regarding training, rewarding, reassigning, promoting, retaining, and removing employees (Demarco & Nigro, 1983; Thompson, 1981). Objectivity, fairness, and communications were stressed in the design of the performance appraisal systems under the CSRA in order to protect public employees from arbitrary and unfair personnel practices (Laponsky, 1987).

It soon became clear, however, that effective performance appraisal was not automatically achieved simply through the establishment of an assessment process consistent with the mandate of the CSRA. Daley (1990a) found little improvement in the process after the implementation of CSRA requirements. Public employees disagreed that outcome-based performance appraisal, that is, appraisal processes in which performance is assessed on accomplishment of specified outcomes expected from work activities,

facilitated communication between employees and managers, increased employee motivation, or improved employee performance (Longenecker & Nykodym, 1996). Researchers concluded that little improvement in the effectiveness of performance appraisal resulted from the design and the implementation of new evaluation processes following the CSRA (Daley, 1990a; Longenecker & Nykodym, 1996; Thompson, 1981).

Problems of performance appraisal result from the weak connections between key elements involved in the appraisal process (Iqbal, Akbar, & Budhwar, 2015), such as the connections between organizational goals and appraisal methods, appraisal methods and supervisors' behaviors, supervisors' behaviors and employees' perceptions, and supervisors' behaviors and the organizational goals. To be more specific, vaguely defined or conflicting organizational goals are detrimental for establishing objective performance appraisal criteria and standards (Ghorpade, Chen, & Joseph, 1995; Scholtes, 1993); this in turn results in a failure to establish the connection between organizational goals and appraisal methods. Supervisors' rater errors lead to inaccurate and unfair appraisal results and make it difficult for the results to be contributed to organizational goals (Bowman, 1999). In addition, supervisors' rater errors can cause negative employee perceptions regarding the performance appraisal system and the organization they work for (Iqbal et al., 2015). To build strong connections between these key elements involved in the appraisal process, organizations must have profound organizational management and performance appraisal systems. In other words, a well-designed and implemented performance appraisal system by itself is insufficient for effective performance appraisal.

Performance appraisal may be ineffective because problems are found in its design and implementation, as well as the organizational management that impacts it.

Problems that result from the design of performance appraisal include flawed standards (Daley, 1992, pp. 82, 106), lack of training (Daley, 1992, p. 109; Reinke, 2003), lack of time/information (Feldman, 1981; Heneman & Wexley, 1983), and documentation requirements (Carroll & Schneier, 1982; Kellough, 2012). Some flawed standards can include implementation problems which result from supervisors' (raters) subjective judgments on good and bad performers (Bowman, 1999). Inflated rating is another implementation problem that is due to supervisors' (raters) failure or unwillingness to discriminate between good and bad performers (Saffie-Robertson & Brutus, 2014; Slaughter & Greguras, 2008; Tziner, Murphy, Cleveland, Yavo, & Hayoon, 2008).

Other than the design/implementation of a performance appraisal system, organizational management may also be a source of problems (Ammons & Condrey, 1991; Tyler, 1983). The most significant problems of organizational management that influence performance appraisal are that supervisors (raters) do not have enough authority and support from top management authorities (Lawler & Rhode, 1976; Mohrman, Resnick-West, & Lawler, 1989). Top management's support determines whether the results of performance appraisal can be used for organizational development. Top management's support also influences whether supervisors have enough authority to determine appropriate appraisal standards and reward good performers (Ammons & Condrey, 1991). Some organizations may have a culture of force quota. This organizational culture may cause problems in performance appraisal process (Mohrman et al., 1989, p. 183; Wexley, Sanders, & Yukel, 1973). These mentioned problems in the design/implementation of a performance appraisal system and organizational

management may be the causes of inaccurate, unfair performance appraisals and cause their results to have no contribution to organizational goals.

To diagnose these problems in performance appraisal process, supervisors' opinions become crucial, but their voices are heard less in the literature. In the literature, evaluations about the effectiveness of performance appraisal heavily relied on the perception of accuracy and fairness of employees (Iqbal et al., 2015; Levy & Williams, 2004; Longenecker & Nykodym, 1996; Walsh & Fisher, 2005). This kind of evaluation is results-oriented. The drawbacks to results-oriented evaluation are that it ignores the process and that the causes of ineffectiveness are not diagnosed. Supervisors, because they are the people who conduct performance appraisals, have significant influence on the operation and effectiveness of performance appraisal processes (Baxter, 2012; Park, 2014; Roberts, 2003). Additionally, it is likely that supervisors may perceive the performance appraisal process differently than nonsupervisory employees. Research has found that supervisors are often concerned about appraisal forms and types of rating systems used while nonsupervisory employees are most concerned with the overall outcome of the appraisal (Mount, 1984; Pooyan & Eberhardt, 1989). These studies suggested that analyzing problems of performance appraisal from the perspective of supervisors will provide different information from analyzing the question from the employees' view point. Supervisors are the implementers of the performance appraisal system. They use the process to make judgments about employee performance and to provide feedback to the employees. They experience all the good and bad in the appraisal process, including issues associated with system design and support from organizational management. Understanding problems in the performance appraisal

process from the supervisors' point of view can shed light on issues that may be most problematic.

To evaluate their perception of problems, factors that may impact the variances of supervisors' perception of problems in performance appraisal must be considered, such as their demographic background and their career experience. Demographic backgrounds may have an influence on supervisors' perception of problems in performance appraisal; research has pointed out that people may be treated differently in the performance appraisal process because of their demographic attributes, such as race, age, and gender (Natbandian, 1981). Supervisors' career experiences, such as the length of time of working in the current agency, time spent in civil service, agencies they worked for, and the location of their working places (headquarter or field) may determine their attitude toward performance appraisal. A supervisors' experience in an agency and in civil service impacts the degree of organizational socialization which in turn changes their point of views regarding the organization and themselves (Buchanan, 1974; Porter, Angle, & Allen, 2003). Working at a headquarter or field may alter supervisors' perceptions because headquarter and field may have different managerial strategy which may lead to different results (Nohria & Ghoshal, 1994).

Three topics about the supervisors' perceived problems are worth discussing. The first one is to find out which issues are problematic and then to understand the extent and the variances of problems. The second is to know which of them are easier to perceive than others. The third one is to understand whether agencies where supervisors perceive more problems also have employees who give more negative feedback. Addressing these three topics about supervisors' perceived problems in performance appraisal allows a

comprehensive understanding and analysis about problems in performance appraisal. Therefore, to be more specific, this study aims to answer these questions: (1) To what extent do supervisors perceive the performance process as problematic? (2) What aspects of performance appraisal do supervisors in federal agencies see as being most problematic? (3) What factors can explain variation in supervisors' perceptions of the problematic nature of performance appraisal? (4) Are there differences in the aspects of performance appraisal seen as most problematic across agencies? (5) Do agencies where supervisors see performance appraisal as more problematic have employees who have more negative views on performance appraisal?

These five questions first evaluate the extent and the variance of problems perceived by supervisors in the performance appraisal process, analyze the factors associated with the perceptions of supervisors, and finally evaluate the impacts of these problems on employees' perceptions. To sum up, this study provides a comprehensive picture about problems in performance appraisal with a description of problems, causes of perceiving these problems, and the consequences of having these problems in an agency.

This study utilizes data from the U.S. Merit Systems Protection Board (MSPB) Merit Principles Survey 2005. MSPB 2005 surveyed supervisors' opinions about problems they perceived in the performance appraisal process. It is the latest and the most comprehensive federal database released that provides data on the questions at interests. Another reason for selecting this data is that it allows this study to evaluate the impact of the Bush Administrative personnel management reforms in 2002 on supervisors' perceived problems. The reform came with the passage of the Homeland Security Act of

2002 which exempted DHS employees from key provisions of Title 5 of the U.S. Code that governs personnel management across the federal government (Brook & Cynthia, 2007; Kellough, Nigro, & Brewer, 2010; Riccucci & Thompson, 2008). That means that the management of the newly formed Department of Homeland Security (DHS) was granted substantial flexibility, which was consistent with the New Public Management Reform. Whether the reform has brought DHS agencies a less problematic performance appraisal system is worth discussing.

To answer the first two research questions, this study will first report the distribution of problems perceived by supervisors in performance appraisal. Nine items of potential problems in performance appraisal will be identified by supervisors based on their experiences in their own agencies. By giving the proportion of each item, the extent and the more problematic items for supervisors can be identified. How these problematic items vary across agencies will also be discussed.

A problem index will be generated from supervisors' responses of their perception of problems in performance appraisal. Their responses of these nine items will be aggregated to generate the problem index which indicates the magnitude of problems perceived by supervisors in a certain agency. In question three, this problem index will be used as a dependent variable in an OLS model to evaluate factors that may explain the variance of supervisors' perception of problems. In question four, the same OLS model in question 3 will be utilized but all of the dependent and independent variables will be aggregated to the agency level.

In question five, the problem index will be used as an independent variable to predict whether employees' views of performance appraisal will be more negative when

the index scores of their agencies are higher. In addition, in question five, the problem index will be transformed by a factor analysis. Two types of problems – problems from performance appraisal design/implementation and problems from organizational management – will be generated through factor analysis. By doing this, this study is allowed to evaluate whether problems of performance appraisal design/implementation or problems of organizational management are more influential to employees' feedback.

This study is featured in terms of two aspects: First, it analyzes problems in performance appraisal with the perspectives of supervisors, and it further analyzes factors that influence the variances of the perceptions of supervisors and the consequences of the perceptions. By doing so, this study evaluates performance appraisal in federal agencies comprehensively and is expected to provide practitioners with information that may be useful for future reform. Second, this study discusses the problems of performance appraisal with a framework which includes two aspects – problems from the design/implementation of performance appraisal and problems from organizational management. This framework emphasizes that performance appraisal is an activity of organizational management. In addition to the design of the performance appraisal system, the process of performance appraisal is influenced by managerial behaviors, and the appraisal results provide feedback to management. Therefore, to improve the effectiveness of performance appraisal, only pursuing a perfect design of the system is not sufficient. The role of management must be considered. The analytic framework may contribute to the literature of performance appraisal studies with a perspective that emphasizes the importance of organizational management in the performance appraisal process.

This dissertation contains five chapters. The first chapter introduces the purpose of the study and provides a brief summary of the research. The second chapter reviews literature related to this study. I will first discuss the role of performance appraisal in organizational management: how it is related to other issues in organizational management and the roles of supervisors in the appraisal process. Second, I will address how performance appraisal typically works. This section introduces frequently used appraisal methods and tools. Third, I will discuss problems which are usually seen in the performance appraisal process, including problems from the design, implementation of performance appraisal, and problems from organizational management that may directly impact the appraisal process. Fourth, the potential sources of variances of perceiving problems in the performance appraisal process will be discussed. The discussion will focus on the influence of supervisors' demographic attributes and their career experiences. Finally, I will review how employees may be impacted by problems of performance appraisal.

The third chapter introduces the data and the methods of this study. I will introduce the models, the variables, and the method used for the analysis. In the fourth chapter, I will report and discuss the results. The discussion will be organized into three parts: The first part is an overall view of the extent and the variance of problems perceived by supervisors in the federal agencies. This part of the discussion provides a general knowledge of the circumstances of performance appraisal in federal agencies. The second part discusses the factors associated with the variances of the perceived problems and how these factors are associated with the managerial roles of supervisors. The third part discusses the consequences of perceiving problems in the performance

appraisal process. The type of problem that is more harmful to employees' perception will be the focus of discussion. I will conclude the study in the fifth chapter.

CHAPTER 2

LITERATURE REVIEW

PERFORMANCE APPRAISAL AND ORGANIZATIONAL PERFORMANCE MANAGEMENT

To understand problems in the performance appraisal process, the discussion must be put in the context of organization. Rainey (2009) provided a thorough definition of organization, which also reveals the complexity of the context of an organization:

An organization is a group of people who work together to pursue a *goal*. They do so by attaining resources from their *environment*. They seek to transform those resources by accomplishing *tasks* and applying *technologies* to achieve *effective performance* of their goals, thereby attaining additional resources. They deal with the many uncertainties and vagaries associated with these processes by *organizing* their activities. Organizing involves *leadership* processes, through which leaders guide the development of *strategies* for achieving goals and the establishment of structures and processes to support those strategies. *Structures* are the relatively stable, observable assignments and divisions of responsibility within the organization, achieved through such means as hierarchies of authority, rules and regulations, and specialization of individuals, groups, and subunits. The division of responsibility determined by the organizational structure divides the organization's goals into components that the different groups and individuals can concentrate on—hence the term *organization*, referring to the set of organs that make up the whole. This division of responsibility requires that the individual activities and units be coordinated. Structures such as rules and regulations and hierarchies of authority can aid coordination. *Processes* are less physically observable, more dynamic activities that also play a major role in the response to this imperative for coordination. They include such processes as determining power relationship, decision making, evaluation, communication, conflict resolution, and change and innovation. Within these structures

and processes, *groups* and *individuals* respond to incentives presented to them, making the contribution and producing the products and services that ultimately result in effective performance. (Rainey, 2009, pp. 20-22)

To sum up, an organization is a system where the organizational goal is delegated from the top leadership to the employees. The employees work within the organizational environment, culture, and structure, and utilize organizational resources and technologies to achieve the organizational goals. In the process, the leadership, organizational environment, culture, structure, resources, and technologies may influence employees' incentives and performance at work, and the employees' perception will contribute to the organization and influence the achievement of organizational performance.

Figure 1 describes the delegation process from organizational goals to individuals. Starting with organizational goals and values, the goal will be set by leadership, transferred by culture, environments, structure, and process which generates incentives for people in the organization to work on the goals; finally, people's output will become organizational performance. If any links in the process fail, the ultimate goal—organizational performance—will not be satisfied. Figure 1 reveals one fact: The contribution of individual output to organizational performance is the outcome of the combination of leadership, organizational culture, organizational environment, structure, process, and technology which provide incentives to individuals in the organization. Although performance appraisal evaluates at the individual level, it actually reveals the results of organizational management (Kim, 2011).

A successful performance management system requires the following features: (1) alignment of the performance management system and the existing systems and strategies

of the organization; (2) leadership commitment; (3) a culture in which it is seen as a way of improving and identifying good performance and not a burden that is used to chastise poor performers; (4) stakeholder involvement; and (5) continuous monitoring, feedback, dissemination and learning from results (Franco & Bourne, 2003; Fryer, Jiju, & Ogden, 2009). These features pointed out that three characters in performance management are crucial: managers (supervisors), employees (good and poor performers), and the organization. Performance management is a process that both managers and employees are involved in to identify organizational visions and goals, to develop appropriate standards of performance, to communicate constructive performance evaluations, and to plan development to improve employee work performance (Kim, 2011; Neely, Mills, & Gregory, 2000). This is a process delegated from the organization to the managers and to the employees.

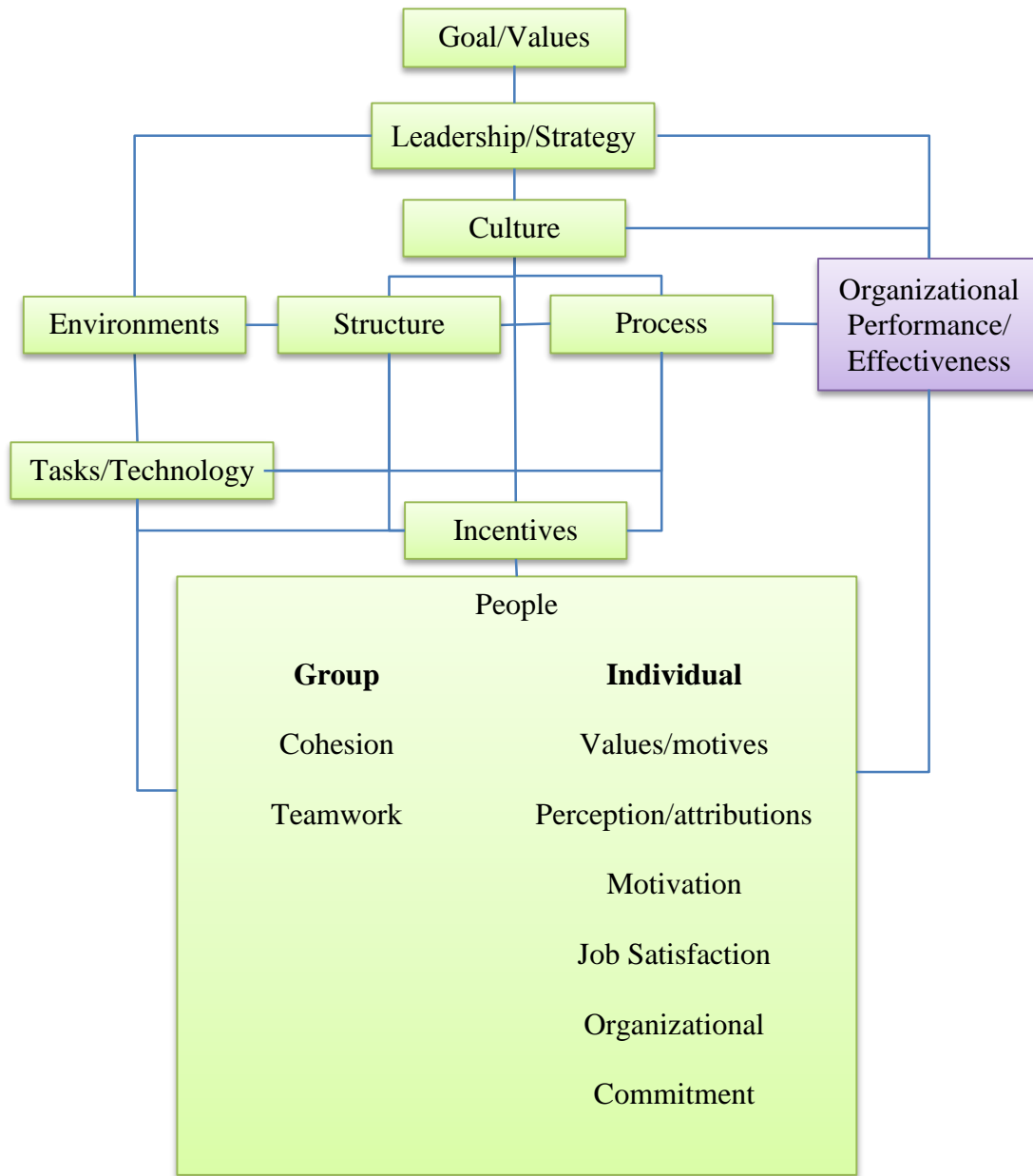


Figure 1. A Framework for Organizational Analysis (Rainey, 2009, p. 20)

Difficulties for Performance Appraisal as a Tool in Performance Management

Performance appraisal is performance management at the individual level (Kim, 2011). However, there are managerial difficulties in the performance appraisal process

that impede effective and successful measurements of the achievement of the organizational goals.

To measure organizational performance at the individual level requires effective appraisal methods which can connect individual worker performance with organizational goals (Samuel, Omisore, & Atajeromavwo, 2014). However, organizational goals are usually difficult to appropriately measure at the individual level, especially in the public sector. Two reasons may explain the difficulty. First, many organizational goals require the efforts of more than one person. When an individual's performance relies on others' work results, reasonable performance standards become questionable because employees may have to be responsible for errors that are the results of other people's decisions (Ghorpade et al., 1995; Scholtes, 1993). As performance appraisal standards are usually established on an individual basis, how to fairly transfer team performance into personal performance is usually criticized (Ghorpade et al., 1995).

Second, goals in public organizations are often in conflict with each other. These conflicts will make performance appraisal difficult. For example, a public transportation service may aim to provide safe and on time service to all passengers. To achieve those goals, managers may request bus drivers to drive with caution and meet their bus schedules. A bus driver who fails to arrive at every stop on time will get low scores on his/her performance appraisal. However, a bus driver who is usually behind on the schedule may be late because he/she has more elder passengers on his/her route. In order to provide safe and considerate service, the driver cautiously waits for these elder passengers to be seated and then drives. The driver's good service slows down the speed

and leads to the failure of meeting the schedule. The driver could be suspended from work because of low performance appraisal scores (Hsin, 2016).

These two difficulties show how performance appraisal in the public sector can be a problem regardless of which appraisal techniques are used. Even if a public organization applies management by objectives (MBO), which helps to connect organizational goals with individual behaviors and emphasizes measureable standards, it cannot alter an unpredictable working environment that makes reasonable performance standards hard to achieve, neither can it ease the conflicts among goals.

Another managerial difficulty in the performance appraisal process is supervisors' rating behaviors which are often criticized to be subjective and fail to reflect the true performance of employees. An objective appraisal method needs supervisors to do objective rating. However, appraisal is a subjective decision made by supervisors whose judgments may be problematic because of (1) cognitive limitations, (2) intentional manipulations, and (3) organizational influence (Bowman, 1999). These problematic ratings hurt performance appraisal in terms of its reliability and validity and may further affect employees' perceptions toward performance appraisal (Iqbal et al., 2015).

Cognitive limitations stem from the cognitive information processing theory (Huesmann, 1998) which states that appraisal is a complex memory task involving data acquisition, storage, retrieval, and analysis. People usually have a limited ability to process these data objectively and employ subjective categories instead (Bowman, 1999). This limitation produces problems in performance appraisal processes such as personal preference errors, recency tendency, first impression error, similar-to-me effect, and halo effect (Bowman, 1999).

Personal preference errors include personal stereotyping and specific preferences of supervisors. Supervisors may have biases toward or against a specific ethnic group, gender, age, or other demographic category, and these biases may be reflected in the performance appraisal process (Baxter, 2012; Griffeth & Bedeian, 1989; Johnson & Ronan, 1979; Lewis, 1997). Recency errors refers to how supervisors evaluate employees based on recent events and ignore the employee's other performances over the entire appraisal period (Hambardzumyan, 2016). First-impression error means that supervisors make an initial judgement about an employee and ignore the employee's later performance (Bernardin & Beatty, 1984). This error is easily seen during the hiring process or probation period when an employee has difficulty performing well. Supervisors may only remember the mistakes the employee initially made and ignore later improvements (Martin & Bartol, 1986).

The similar-to-me effect means supervisors tend to favor employees whom they perceive as exhibiting the same qualities as their own, such as attitudes, backgrounds, and experiences (Locke & Latham, 1984). The more the supervisor perceives the similarity, the more the employee will be favored and get higher scores in performance appraisal (Kellough, 2012). The halo error refers to the rating tendency that occurs when a supervisor allows a rating on one criterion to influence the overall evaluation (Balzer & Sulsky, 1992). Both negative and positive halo errors may occur. When halo errors occur, "the individual is viewed as being either incapable of success or unable to do wrong" (Battaglio, 2015, p. 204), but either situation indicates a biased evaluation.

Another source of rating problems is that appraisal results in many organizations are intentionally manipulated for managerial or political purposes, making them higher or

lower than the employee deserves (Bowman, 1999). Leniency/strictness error is one type of these problems. It occurs when supervisors have the tendency to give every employee positive/negative performance ratings. Supervisors may do this to win good relationships with employees or establish their own authority (Bernardin & Beatty, 1984). Supervisors may also have this tendency because they make judgements based on the results of previous performance appraisals (London, Mone, & Scott, 2004).

Organizational influences refer to the situations where supervisors' rating behaviors are affected by organizational reasons (Bowman, 1999). The first impact of organizational influences is rater motivation, which is described in terms of the basic goals or objectives that drive behavior (Harris, 1994). Supervisors may be unsatisfied with the performance appraisal processes, overwhelmed by the daily press of business, and may provide insufficient amount of information about their employees to give the ratings (Fried, Tiegs, & Bellamy, 1992; Harris, 1994; Saffie-Robertson & Brutus, 2014; Tziner et al., 2008). All these situations may lower supervisors' rater motivation. Low rater motivation leads to rating errors, such as central tendency errors (Saffie-Robertson & Brutus, 2014; Slaughter & Greguras, 2008; Tziner et al., 2008). Organizational influences may also lead to comparison or contrast effects which indicates that supervisors evaluate employees by comparing and contrasting them instead of evaluating employees on their own performance against a defined standard (Latham & Wexley, 1994; Wexley et al., 1973).

Because of the problems in supervisors' rating behavior, the accuracy of performance appraisal is often questioned. The accuracy problem further influenced the use of performance appraisal results for judgment and development. Organizations

usually carry out performance appraisal for two purposes: judgment and development (Daley, 1992; Lacho, Stearns, & Villere, 1979). Judgmental decisions include merit pay and promotion; developmental decisions refer to training, goal alignment, and other decisions for organizational improvement (Lacho et al., 1979). To connect performance appraisal to organizational goals, results of performance appraisal must be used for developmental purposes (Daley, 1992). However, studies show that results of performance appraisal are rarely used for these purposes (Daley, 1990, 1992; Lacho et al., 1979; Schwabe, 1986). Schwabe (1986) found that only 19% of cities in a national sample applied their results of performance appraisal for training, while 76% applied the results for merit pay and promotion. Daley (1990) studied cities and towns in North Carolina and found similar results.

One reason for the lack of developmental use of performance appraisal is the problems of appraisal accuracy. Accuracy is the first criteria considered when deciding how to use the results of performance appraisal (Herbert & Doverspike, 1990). Accuracy may also influence an organization's decisions on whether to align organizational goals based on results of performance appraisal (Ayers, 2015). As mentioned earlier, the accuracy of performance appraisal greatly relies on supervisors' subjective decisions. Supervisors' errors, especially halo errors, were found to be more influential on the reliability of developmental decisions than judgmental decisions (Herbert & Doverspike, 1990). As a consequence, with fewer developmental usages, the linkage between the results of performance appraisal and organizational goals are weak.

To summarize, most of the problems in the performance appraisal process are due to its lack of accuracy; and most of the problems in performance appraisal accuracy are

due to the difficulties connecting organizational goals with individual goals and the supervisors' problematic rating behaviors.

Deming's Critiques on Performance Appraisal

Performance appraisal is organizational performance management at the individual level. The assumption is that when everyone does his/her best, the organization will have its best performance. Deming's famous critique claimed that the assumption is wrong because best efforts are not sufficient: "Think of the chaos that would come if everyone did his best, not knowing what to do (Deming, 1986, p. 19)." According to Deming, the practice of performance appraisal is the main cause of quality problems (Ghorpade et al., 1995).

Deming argued that performance appraisal systems are problematic for at least four reasons (Deming, 1981, 1986; Ghorpade et al., 1995). First, performance appraisal practices are unfair since they hold the worker responsible for errors that may be the result or fault of prior decisions, defects in materials, flaws in the design of the system, or some other managerial shortcoming. These errors are not simply rating errors resulting from appraisal methods but are problems lying largely with the organization (Ghorpade et al., 1995). Second, performance appraisal promotes worker behaviors that compromise quality. This critique is especially applicable when one considers MBO, pay for performance, and goal-setting. Deming believed that these methods promote a short-term perspective, and employees will be directed toward meeting these short-term targets and quotas only (Deming, 1981, 1986; Ghorpade et al., 1995). Third, performance appraisal practices create a band of discouraged workers who cease trying to excel. Supervisors

usually practice performance appraisal by classifying works according to relative rankings, particular subjects, or forced distribution. Employees easily receive results such as “average” and “satisfactory.” These results provide no incentive for employees to improve (Deming, 1981, 1986; Ghorpade et al., 1995). Fourth, performance appraisal practices rob workers of their pride in workmanship. This charge targets the central tendency error that frustrates and deprives employees of knowledge of how well they are really doing in terms of quality of outputs (Deming, 1986; Ghorpade et al., 1995; Soltani, Van der Meer, & Williams, 2005).

Deming believed that organizational productivity is the ultimate goal. To achieve that goal, organizations should pursue quality instead of employees’ hard work and efficiency. Emphasizing quality is not meant to sacrifice employees’ performance and motivation. On the contrary, as quality is improved, both managers and employees will be further motivated because the improved working process allows them to do a much better job with less effort (Deming, 1981). Improving quality means less cost, better productivity, and happier employees.

Deming’s theory requires excellent leadership. Managers should know the long-term goals of their organizations and the methods to reach those goals. The key point is to focus on quality management rather than individual performance. He proposed 14 points that an organization should follow to pursue quality management (Deming, 1981, 1986; Neave, 1987):

1. Create constancy of purpose toward improvement of product and service;
2. Adopt a new philosophy (take on leadership for change);
3. Cease dependence on inspection (build quality into the product in the first

place);

4. End 'lowest tender' contract (minimize total cost by having single suppliers on long-term relationships of loyalty and trust);
5. Continually seek out problems;
6. Institute training on the job;
7. Institute supervision (to help people to do a better job);
8. Drive out fear (so that everyone may work effectively for the company);
9. Break down barriers between departments;
10. Eliminate exhortations to aim at the work force;
11. Eliminate targets and management by objectives. Substitute leadership;
12. Permit pride of workmanship;
13. Institute education;
14. Top management's commitment.

These 14 points were the key ideas of the Total Quality Management (TQM). Deming proposed TQM as an alternative approach for organizations to improve outputs (Deming, 1981, 1986).

TQM was eventually criticized in practice for several reasons. First, TQM requires strong leadership to implement the program (Soltani et al., 2005), and it failed in both the public and private sectors because of the shortage of strong leadership. Second, TQM requires sufficient resources and time before quality improvement can be observed, but usually resources and time are scarce (Soltani et al., 2005). Third, TQM requires an extremely strong organizational culture with a strong commitment to quality. Not many

organizations satisfy this condition, and it is not easy to reshape organizational culture to do so (Swiss, 1992).

Adapting TQM in the public sector is often more problematic than implementing it in the private sector. In the public sector, organizations provide “services” rather than “products.” One distinction between services and products is that the output of service varies with clients because services for each client varies with clients’ needs (Swiss, 1992). This variation makes standardized output more difficult to achieve. Additionally, clients’ preferences are not consistent. Standardized service may not satisfy everyone (Swiss, 1992). Furthermore, public organizations have to serve both direct clients and the general public whose requests are quite different for public organizations (Swiss, 1992). Quite often, public organizations have to choose to satisfy one and sacrifice another for a better good, but those sacrificed will be disappointed (Swiss, 1992). Defining a government’s customers is another difficulty for public organizations in adapting TQM. These problems make public organizations focus more on inputs and processes rather than outputs, making TQM difficult to implement in public organizations.

Performance appraisal has expressed major shifts recently in that it focuses more on development than control, and it focuses the process more on employee potential rather than skills deficits (Fisher, 1995). Additionally, performance appraisal has been improved by placing more emphasis on effective training, clear communication of the objectives, and the importance of feedback information from a variety of stakeholders in the organization (Soltani et al., 2005).

For the reasons mentioned above, even though it is strongly criticized, performance appraisal is nearly universally used both in the public and private sectors.

However, Deming's critiques about the influence of supervisors' rating problems and how these problems lead to the failure of performance appraisal should be carefully considered for future practice. It is necessary to understand what supervisors think about the problems in performance appraisal processes, how these problems vary across agencies, and what the patterns of these problems are which affect employees' perceptions.

HOW PERFORMANCE APPRAISAL TYPICALLY WORKS

Four models are usually used as the basis for performance appraisal techniques in the public sector: traditional methods, trait-based methods, behavior-based methods, and outcome-based methods.

Traditional methods are regarded as wholly subjective instruments of performance appraisal (Daley, 2009). They require supervisors to use narrative assessments to evaluate employee performance. Supervisors should address specific criteria in their narratives, such as productivity, accuracy, and coordination, and they should use those criteria to evaluate employee performance. When doing the evaluation, supervisors write an essay that reviews an employee's performance for a specified period of time. This narrative assessment approach provides supervisors great flexibility in elaborating on the results of evaluation, but it is also time-consuming, training intensive, and depends heavily on the supervisor's writing skills (Battaglio, 2015).

Trait-based methods assess whether employees have desirable personality traits that are presumed to be associated with good performance. A Likert scale (e.g., very satisfactory to very unsatisfactory) is typically used to judge whether or not an employee

has specific traits. These personality characteristics may include communication skills, dependability, initiative, enthusiasm, persistence, team orientation, decisiveness, and other personality dimensions that may be critical for work settings (Kellough, 2012). Trait-based methods are criticized because the linkage between positive personality traits and job performance is indirect, weak, and usually cannot withstand legal scrutiny (Battaglio, 2015; Bowman, 1999). Because of these weaknesses, trait-based methods are not likely to be the only technique used in the performance appraisal process.

Behavior-based methods evaluate a set of clear defined, desired, and observable behaviors that are required from a detailed job description. These behaviors may include but are not limited to the timely completion of required work; efforts to assist coworkers; and respectful, courteous, timely, and tactful interaction with clients (Kellough, 2012). Usually supervisors give a score or use a Likert scale to indicate the extent to which these behaviors are exhibited by employees. Behavior-based methods require human resources managers to carefully identify desirable and undesirable behaviors based on job descriptions. These managers must be well trained and expert in the development and implementation of behavior-based methods to provide useful feedback to employees (Bowman, 1999). As long as the development and implementation of the evaluation are completed systematically and carefully, the results of behavior-based evaluation will likely withstand legal scrutiny (Bowman, 1999), but still, we have a system that lacks direct observations of tangible work outcomes.

Outcome-based methods attempt to resolve that problem by specifying and measuring performance results in terms of well-defined and objective work products. One of the most widely used outcome-based methods is management by objectives (MBO),

which emphasizes the link of means and ends (Rodgers & Hunter, 1991). MBO requires supervisors to work with employees to discuss the objectives and expectations of the employee's work. These individual objectives and expectations are set on previously articulated organizational objectives. MBO assumes that by tying individual goals with organizational goals, employees will be directed toward the promotion of organizational productivity (Rodgers & Hunter, 1991; D. Thompson, 1981). Additionally, mutually agreed individual goals defined in terms of work outcomes may enhance employee motivation to perform and commitment to the organization (Locke & Latham, 2002; P. J. Taylor & Pierce, 1999).

These assumptions are based on Locke's goal setting theory (or goal theory) which deals with the relationship between conscious goals or intentions and task performance (Latham & Yukl, 1975). According to the theory, an individual's conscious intentions (goals) regulate his/her actions, but goals assigned to a person have an effect on behavior only to the degree that they are consciously accepted by the person (Locke & Latham, 2006). Accordingly, to successfully implement MBO, supervisors must be skillful and capable in working with employees to set mutually agreed goals (Kellough, 2012). The success of MBO depends heavily upon supervisors' skillfulness; additionally, identifying targeted work outcomes are problematic for some employees. The difficulty is due to the results of team work, the conflicts of organizational goals, and the inconsistent preferences of clients of public organizations (Swiss, 1992). Despite these difficulties, MBO is one of the performance appraisal methods that most satisfies CSRA's requirements.

Usually human resource managers in the public sector will evaluate the needs of their organizations and consider a performance appraisal process that incorporates a combination of these four appraisal methods (Battaglio, 2015). Behavior-based and outcome-based methods are widely used because these methods allow human resource managers to set relatively clear performance expectations for employees.

PROBLEMS IN THE PERFORMANCE APPRAISAL PROCESS

It is widely understood that employee performance appraisal rests ultimately on the judgment of supervisors. The integrity of the system is dependent on the appropriate exercise of supervisory judgment. Errors in judgment are, of course, always possible, and practitioners as well as scholars have long recognized a list of common errors that can plague the appraisal process (Daley, 1992; Armstron, 2010; Kellough, 2012; Mitchell & Gamlen, 2012; Battaglio 2015). Among the most common of these errors are the following:

1. The “halo effect” whereby a supervisor observes a subordinate doing one task well and rates that person high on all tasks (the opposite is, of course, also possible).
2. The “first impression error” where the rating is determined by the initial impression the supervisor forms of the employee.
3. The “similar-to-me effect” that occurs when supervisors rate employees higher when those employees exhibit behaviors similar to the supervisor’s own actions.

4. Employee “comparison or contrast effects” where employees are rated relative to each other rather than relative to specific standards, and
5. The “central tendency error” that occurs when employees are typically rated at the mid-point of rating scales used.

All of these errors in judgment may be mitigated through the development and implementation of a well-designed performance appraisal system that includes adequate training for supervisors in the appraisal process and support from higher management to ensure that supervisors have adequate information, time, and authority to successfully implement the appraisal process. Failure in either the design of the system or in support from organizational management may increase the frequency of error in the assessment process.

To gain insight into the presence of underlying structural or implementation problems in performance appraisal, the perceptions of supervisors are of key importance. Supervisors sit at the nexus between organizations and employees (Daley, 1992, p. 48). Supervisors not only operate the evaluation process, but also receive feedback from both employees and upper managers regarding the system and its outcomes. As a result, supervisors will see problems resulting from the design and operation of performance appraisal systems that others do not recognize.

In the analysis below, this study focuses on a set of interrelated problems in the design and operation of performance appraisal systems identified by the U.S. Merit Systems Protection Board and addressed in their 2005 Merit Principles Survey where they asked supervisors if “During the past year, did you rate any employee higher or

lower than you believe the employee deserved?” A total of 2,393 or 16.4 percent of the supervisors responding said yes to that question. Those supervisors who answered affirmatively were then asked why that employee(s) received that rating and were asked to select all that applied from a list of possible reasons that included 9 interconnected difficulties with performance appraisal systems. The potential problems identified were:

1. Flawed performance standards or measures
2. Lack of information about an employee’s performance
3. Lack of time
4. Lack of training on rating employee performance
5. Lack of authority
6. Lack of support from higher-level management
7. A history of inflated performance ratings
8. A forced distribution or quota for performance ratings
9. Documentation requirements

Flawed Performance Standards or Measures

Performance standards are the benchmarks by which performance is judged. The specification of performance standards requires the identification of criteria by which work will be evaluated and designation of levels of performance on those criteria necessary to meet or exceed acceptable levels of work. The stipulation of performance standards is the foundation for performance appraisal. Unfortunately, wholly objective criteria are difficult to identify for most jobs, and as a result, appraisals will, to a greater

or lesser extent, rest on subjective decisions made by supervisors whose judgments can be problematic (Bowman, 1999). The inherently subjective nature of performance ratings can make the appraisal process unreliable and invalid, and may negatively affect employees' perceptions of the process and of management (Iqbal et al., 2015).

Reasonable performance standards are often hard to define because the work products or outcomes of many employees are difficult to ascertain or vary from day to day. In such circumstances, performance assessment may rest solely on an evaluation of employee behaviors that are presumed to be associated with performance (for example, meeting deadlines on time, interacting courteously with clients, or assisting coworkers). Assessment may also rest on perceptions of employees traits thought to be indicators of performance (for example, honesty, ingenuity, dependability, or cooperativeness). However, while specified behaviors and traits may be suggestive of performance, they are not direct measures of employee productivity (Kellough, 2012).

Another problem that may occur is that regardless of the criteria utilized on the performance assessment, differing levels of success appearing on rating scales may not be adequately defined or described. For example, the term "average" may not be understood as the "arithmetic mean," but as "second rate," "minimally acceptable," or "being barely passing" by some supervisors (Daley, 1992, pp. 82, 106). Clear behavioral definitions of the available levels on each scale should be defined (Battaglio, 2015). In addition, the number of levels or categories of performance may itself be insufficient to capture the range of observable differences in performance, and that also may lead to error (Daley, 1992, p. 118).

Lack of Information about an Employee's Performance

Supervisors are not always in close proximity to the subordinates they oversee, and if interactions between supervisors and subordinates not occur on a frequent basis, supervisors may lack sufficient data to accurately evaluate performance. In addition, it may often be the case that subordinates have expertise that supervisors do not have, or do not have in an adequate degree to allow informed assessments of subordinate action. It is also typical for performance appraisal to occur only once per year. As a result, there may be long delays or gaps between employee behavior and supervisory assessment of performance, and that may inhibit the ability of supervisors to recall details of subordinate activity (Feldman, 1981; Heneman & Wexley, 1983). Indeed, the appraisal may come months after specific employee actions are observed, and inaccuracy in assessments may occur (Heneman & Wexley, 1983). For all of these reasons, information needed by supervisors to sufficiently evaluate subordinate performance may be inadequate.

Lack of Time

Supervisors are usually very busy with multiple items requiring their attention. Effective performance appraisal, however, requires significant supervisory time for the formulation and determination of ratings and review meetings with subordinates. Heneman and Wexley (1983) found, for example, that amount of time spent on an appraisal may, for some supervisors, be seen as a distraction from other supervisory duties and may be considered an unpleasant additional burden. The extent to which this is the case will likely increase the number of subordinates evaluated increases (Feldman,

1981; Heneman & Wexley, 1983). To the extent that other supervisory responsibilities crowd out the time necessary for detailed and careful attention to performance appraisal, the quality of the appraisals conducted will suffer.

Lack of Training on Rating Employee Performance

It is essential that supervisors be trained in the performance appraisal process so they can make fair assessments and avoid the kinds of common errors (for example, the halo effect, first impression errors, the similar-to-me effect, comparison or contrast effects, and the central tendency error) noted earlier (Bernardin & Buckley, 1981; Jackson, Atkins, Fletcher, & Stillman, 2005; Lievens, 1998; Pulakos, 1984). Supervisors can also learn how to observe employees' behaviors (Bernardin & Beatty, 1984), how to acknowledge performance dimensions/standards, and how to differentiate these dimensions/standards into rating results (Lievens, 1998; Woehr, 1992). Training can also increase supervisors' acceptance of the performance appraisal system (Martin & Bartol, 1998; Reinke, 2003; Roberts & Pavlak, 1996). In short, a lack of training of supervisors can be a major reason for problems in performance appraisal (Herbert & Doverspike, 1990; Roberts, 2003).

Unfortunately, supervisory training in performance appraisal processes is often neglected and viewed as a relatively low managerial priority (Daley, 1992, p. 109; Reinke, 2003). In a survey study conducted by Reinke (2003), only 41.3% of 651 supervisors of a suburban county in Georgia reported they had received training on the appraisal process. As a consequence, the provision of systematic training in performance

appraisal may be one of the most important steps that can be taken to improve employee performance appraisal.

Lack of Authority

Supervisors' jobs are difficult. They have responsibility for work within their units and for ensuring that their employees contribute to organizational productivity. If supervisors are to do their jobs effectively, they must have the authority to direct their employees, and that must include the authority to evaluate and manage employee performance. Supervisors must have authority to set individual employee performance goals and objectives. They must also have the right to collect and retain information necessary to document performance. They need authority also to make determinations about levels of employee performance and the nature of any performance problems uncovered. Supervisors should be able to redirect employee attention to areas that need improvement and to reward outstanding performance through appropriate recognition or other means. We cannot fairly hold supervisors responsible for productivity within their units unless we grant them sufficient authority to assess and manage employee performance.

A Lack of Support from Higher-Level Management

Support for supervisors from higher-level managers is another requisite for effective performance appraisals (Ammons & Condrey, 1991; Tyler, 1983). Managerial support may take the form of sufficient grants of authority describe above or efforts to ensure that supervisors are given the time necessary to monitor and accurately assess

employee performance. Higher management must support supervisors in all aspects of the performance appraisal process so that supervisors will know they have the backing to make independent and sometimes difficult decisions about subordinates' performance and to take action based on those assessments including allocating or withholding resources from employees (Ammons & Condrey, 1991). In addition, strong support from top managers sends a message to employees that individual performance appraisal is an important part of the operation of the organization (Mohrman et al., 1989). Employees from the lower levels take cues from the top, and they will be influenced by the directives of higher-level managers (Lawler & Rhode, 1976). Unfortunately, studies have found that in the context of performance appraisal full support from top management officials is not common (Kim, 1988; Latham & Wexley, 1994)

A History of Inflated Performance Ratings

Inflated ratings are the result of systematic bias in performance appraisal leading to inappropriately high scores. Elevated ratings result from leniency that may occur because supervisors dislike giving low ratings to subordinates and simply find it easier to give higher scores. This approach allows supervisors to avoid the trouble and time needed to construct and document justifications for low ratings. Simply put, it is easier to inflate ratings. However, the failure to differentiate properly between higher and lower performance yields inaccurate performance information and provides an inadequate basis for making important personnel decisions such as those associated with promotions, pay increases, and other actions (Guralnik, Rozmarin, & So, 2004; Jawahar & Williams, 1997). Nevertheless, supervisors often lack the energy, commitment, or motivation to

distribute low scores, even when they are justified (Saffie-Robertson & Brutus, 2014; Slaughter & Greguras, 2008; Tziner, Murphy, Cleveland, Yavo, & Hayoon, 2008). In addition, supervisors may wish to avoid harsh ratings in order to avoid alienating workers and to avoid the need to deal with unhappy employees who would be denied promotions or salary increases if low ratings are given (Jawahar & Williams, 1997; London, Mone, & Scott, 2004; K. R. Murphy & Cleveland, 1991). Jawahar and Williams (1997) note that the inflated rating bias is more commonly seen when performance appraisal is for judgmental/administrative purposes, such as promotion, pay incentives, and retention, instead of developmental ones, such as training. However, several studies show that performance appraisal results are rarely used for developmental purposes (Daley, 1990b, 1992; Lacho, Stearns, & Villere, 1979; Schwabe, 1986). As a consequence, inflated ratings are frequently seen in the performance appraisal process (Slaughter & Greguras, 2008).

A Forced Distribution or Quota for Performance Ratings

Organizations and their top-level managers may request supervisors to come up with a distribution of performance ratings that resembles the normal curve as a way of avoiding the problem of inflated ratings (Mohrman, Resnick-West, & Lawler, 1989, pp. 182-183). The obvious problem of this approach, however, is that employee performance is not normally distributed (Mohrman et al., 1989, p. 183). Organizations do not randomly select their employees. Employees are selected and hired because they are considered well-qualified for the tasks associated with their jobs (Daley, 1992, p. 78). Furthermore, employee training and experience on the job will help to enhance

performance (Mohrman et al., 1989, p. 183). For all of these reasons, organizations may find that most of their employees are good performers, and a normal distribution of performance levels should not be expected. In addition, when a normal distribution is forced upon the appraisal process, the criteria used to separate or distinguish between employees' varying levels of performance becomes artificial, and the comparisons are more subjective than ever (Mohrman et al., 1989, pp. 182-183).

Documentation Requirements

The process of performance appraisal can be stressful for the employee being evaluated, but also for the supervisor doing the evaluation. Everyone involved, from the employee to the supervisor, the organization, and public, has a stake in ensuring that the process has integrity. It is essential, therefore, that supervisors be able to document the performance of subordinates in order to justify ratings given. If the assessment rests on proper documentation, then supervisory judgment is constrained and employees are likely to accept the results whether they are positive or negative.

Documentation should begin with well-crafted, up-to-date, and accurate job descriptions outlining each employee's responsibilities. Supervisors should then have a system in place through which they regularly record instances when employees meet or exceed those responsibilities and as well as when they fail to succeed in their assignments. This information can be placed into a log or file that can then be used by the supervisor when the time comes for the annual appraisal. The problem, however, is that this is a labor intensive process. It requires considerable time and effort to assemble proper documentation, and as the number of subordinates increases, the effort necessary

for supervisors to properly verify performance of employees supervised also expands. Performance appraisal should not simply be a matter of a supervisor sitting down once per year to fill out a rating sheet on each subordinate and then meet briefly with them to review the outcome. It is a continuous process that requires regular and thorough documentation of each subordinate's work performance. Unfortunately, the burden that the need for documentation places on the supervisor can be an obstacle to effective performance appraisal.

HOW PROBLEMS IN PERFORMANCE APPRAISAL AFFECT EMPLOYEE PERCEPTIONS

Organizations use effective performance appraisal to enhance employee motivation, to help employees adjust the way they work, and eventually to achieve organizational goals. Effective performance appraisal should produce results that employees perceive as accurate. Accuracy of the appraisal results are highly correlated with employees' perceived fairness of the performance appraisal process (Elicker, Levy, & Hall, 2006; M. S. Taylor, Tracy, Renard, Harrison, & Carroll, 1995; Tsai & Wang, 2013).

Problems in the rating process reduce the accuracy of appraisal results, produce the perception of unfairness, and finally lead to negative employee perceptions. According to Adam's equity theory (1965), when employees feel their hard work is not reflected in their appraisal results (the perceived unfairness), they will find a way to resolve the perceived inconsistency, such as showing retaliation or being counterproductive (Adams, 1965; Rainey, 2009; Skarlicki & Folger, 1997). Other effects

of perceived unfairness include lower satisfaction with the performance appraisal system, supervisors, rewards, and performance feedback (Colquitt, 2001; Jawahar, 2007; Jepsen & Rodwell, 2009); lower overall job satisfaction (Cropanzano, Prehar, & Chen, 2002; Foley, Hang-Yue, & Wong, 2005; McFarlin & Sweeney, 1992); lower organizational commitment (Foley et al., 2005; Heslin & VandeWalle, 2011; McFarlin & Sweeney, 1992); lower collective esteem (Colquitt, 2001); fewer helpful behaviors (Colquitt, 2001); and lower work motivation (Colquitt, 2001; Iqbal et al., 2015). In other words, when employees perceive unfairness in the performance appraisal process, their negative perception toward the organization, supervisors, or the performance appraisal system may end up making these employees poor performers.

The significance of a failure to linking positive performance appraisal results to positive employee perceptions/rewards is highlighted in the expectancy theory. According to the expectancy theory, employees expect extra efforts will lead to extra rewards (Rainey, 2009; Vroom, 1964). To be more specific, employees will be motivated to do better work when they expect that: (1) their efforts will lead to higher performance (the effort-performance expectation); (2) higher performance will lead to specific outcomes (the performance-outcome expectancy) and the outcomes seem desirable. Desirable outcomes usually include higher pay, promotion, or better benefits. When pay is affected, for example, employees will be more sensitive to appraisal results; when the results do not meet their expectations, the performance appraisal process may lead to lower work motivation (Kellough & Lou, 1993; Pearce & Perry, 1983) and lower trust of organizational management (Mohrman et al., 1989).

The impacts of performance appraisal to an organization and employees are comprehensive, given that performance appraisal sets up the “rules of the game” in an organization (Daley, 1992, p. 51). Affected employee perceptions, such as trust of supervisors, trust of managers, beliefs about getting the right pay, satisfaction with performance appraisal standards, satisfaction with the performance appraisal process, job satisfaction, and intention to turnover are often discussed in research. These perceptions are affected by overall results of performance appraisal or by specific problems in the appraisal results. The following is a review of how problems in the performance appraisal process affect employees’ perceptions.

Affected Employee Perceptions

Employees’ Trust for Supervisors and Managers

Employees’ trust for supervisors and managers has been examined as both products and determinants (Dirks, 2000; Mayer, Davis, & Schoorman, 1995). Trust in supervisors can be an important factor that determines employees’ perception of accuracy and fairness of performance appraisal results (Fulk, Brief, & Barr, 1985). When employees trust their supervisors, the communication between supervisors and themselves is open. Employees can talk about job-related problems without fear of negative results on their appraisal with their supervisors (Fulk et al., 1985). The connection between supervisors and employees makes employees tend to believe that the results of performance appraisal are accurate.

Trust for supervisors and managers can also be the products of employees’ perception of the accuracy of performance appraisal results (Dirks & Ferrin, 2002; Fulk

et al., 1985; Mayer & Davis, 1999; McCauley & Kuhnert, 1992). Park (2012) noted that increasing accuracy and fairness of performance appraisal results is positively related to employees' trust in leadership. Problems in the performance appraisal process, such as inflated rating, flawed standards, and forced distribution usually fail employees' expectations. These problems are usually closely related to employees' expectations for supervisors and managers to make accurate and fair judgments on their performance (Daley, 1992, p. 52). Employees feel supervisors and managers are not trustworthy when employees find that their appraisal results are not the results they expected (Daley, 1992, p. 53).

Employees' Trust in Getting the Right Pay

The public sector has introduced pay for performance which is a businesslike incentive structure used to increase employees' motivation at work. The assumption of pay for performance is that interests between the organization and the employees are to be aligned via monetary incentives (Jensen & Murphy, 2010; Weibel, Rost, & Osterloh, 2010). The assumption begins with the premise that pay for performance must be correctly administrated to boost the performance of the organization and the employees' motivation (Burgess & Ratto, 2003; Swiss, 2005). Correctly administrated pay for performance means that the pay system must (a) distribute rewards consistent with policy; (b) allow employees to understand how the pay system works; (c) appraise employees' performance as adhering to written standards; and (d) have the pay plan adequately funded (Miceli, Jung, Near, & Greenberger, 1991). The four conditions require adequately designed performance standards that can reveal the true performance

of employees and sufficient funds that can support the system. However, these conditions are usually hard to satisfy in the public sector.

Problems in the performance appraisal process may lead to inaccurate performance appraisal results which increase the difficulties for these conditions to be satisfied. Accurate performance appraisal results require performance standards to be defined and aligned with the organizational goals (Wright, Dunford, & Snell, 2001). Additionally, supervisors and managers have to recognize their potential rater biases and be able to observe and differentiate good and poor performers (Rotundo, 2009). However, as mentioned earlier, these problems are usually seen in the performance appraisal process in the public sectors.

In addition to the problems in the performance appraisal process, public organizations encounter more difficulties in having sufficient funding because they are limited by the budget system. For example, incremental budgeting added uncertainty in administrative and managerial endeavors and worsened the discrepancy between performance and pay. This structure limitation even restricted the funding for the basic provision of public service, not to mention the restriction on rewarding good performers (Daley, 1992, p. 65). This situation has added unfairness across agencies. Employees in an underfunded organization received lower rewards compared with those in fully funded ones (Schay, 1988). These situations make employees more unlikely to believe they are receiving the right pay.

Employees' Satisfaction with the Performance Appraisal Process, Standards, and Overall Job Satisfaction

“Fairness” is the criteria required for employees to be satisfied with a performance appraisal process, standards, and job satisfaction (Greenberg, 1986; Greenberg & Colquitt, 2014). There are two types of perceived fairness for employees: distributive and procedural fairness (Greenberg, 1986). Distributive fairness refers to outcomes, such as rewards, payments, and benefits that are allocated with equity and equality (Colquitt, 2001). Procedural fairness usually means employees have influence over the appraisal outcomes, or the appraisal process adheres to a fair process criteria, such as consistency, the lack of bias, accuracy, and ethicality (Leventhal, 1980). Procedural fairness also requires fairness in the interpersonal treatment employees received during the appraisal process (Bies & Moag, 1986) and the quality of communication between employees and supervisors during the performance appraisal process (Jawahar, 2007). In other words, to perceive distributive and procedural fairness, employees require unbiased performance evaluation, sufficient communication between supervisors and employees, and fair interpersonal treatment. Any supervisors' rating problems in the appraisal process may cause lower perceived fairness by employees (Iqbal et al., 2015). Employees who are unsatisfied with the performance appraisal process may end up being poor performers (Becker & Klimoski, 1989; Meyer, 1975; Pearce & Porter, 1986).

The relationship between fairness and employees' satisfaction with performance appraisal process, standards, and job satisfaction can be explained by the goal setting theory (Locke, 1968; Locke & Latham, 2002), expectancy theory (Vroom, 1964), and

equity theory (Adams, 1965). According to the goal setting theory, employees perform better with hard (high) and specific goals than with easy or abstract goals (Locke & Latham, 2006). While public agencies have high levels of goal ambiguity (Chun & Rainey, 2005), delegating those ambiguous organizational goals to the individual level may result in even more vague individual goals for employees and may lead to lower satisfaction with the performance appraisal standards and process. The equity theory points out that when employees feel unfairness in their appraisal results, their satisfaction with their jobs, performance appraisal system, and the standards in use drop (Colquitt, 2001; Gabris & Ihrke, 2001; Jawahar, 2007; Jepsen & Rodwell, 2009). According to the expectancy theory, employees expect that extra efforts will lead to extra rewards (Rainey, 2009; Vroom, 1964). When their expectations are not met, their satisfaction with their supervisors and the performance appraisal system drops (Mount, 1983; Pooyan & Eberhardt, 1989).

In addition to being directly influenced by the fairness that an employee perceives in the performance appraisal process, employees' job satisfaction is also explained by their satisfaction with the performance appraisal process and standards (Gabris & Ihrke, 2001; Kuvaas, 2006; Poon, 2004), the feedback the employees get from supervisors (Aplin & Schoderbek, 1976; Daley, 1986, 1988; Yeager, Rabin, & Vocino, 1985), and the results of pay for performance (Durham & Bartol, 2009). To conclude, employees' job satisfaction is affected directly and indirectly by problems in the performance appraisal process.

Employees' Turnover Intention

Studies have found that employees' turnover intention is related to their perception of problems in the performance appraisal process (Brewer & Kellough, 2008; Roberts, 1994a). Daley (1992) found that employees have lower turnover intentions when they viewed themselves as receiving adequate feedback from their performance appraisal. Poon (2004) found that if employees perceive that their performance ratings are manipulated by raters' personal bias, the employees have greater turnover intentions. Cho and Lewis (2012) pointed out that fair and accurate performance appraisal and merit-based rewards are critical for reducing employees' turnover rates.

CONCLUSION: FROM SUPERVISORS' PERCEIVED PROBLEMS IN THE PERFORMANCE APPRAISAL PROCESS TO EMPLOYEES' PERCEPTIONS

As discussed in the literature review, problems in the performance appraisal process include those that resulted in the design and the implementation of performance appraisal and the organizational management related to performance appraisal. While employees usually perceive problems in performance appraisal in a more general way (Mount, 1983), supervisors who actually experience every part of performance appraisal are good sources to evaluate the extent and the variance of problems in the process.

Previous studies usually discussed the impacts of problems in performance appraisal at the individual/employee level. In other words, these studies discussed employees' perceptions/reactions to performance appraisal such as their trust in supervisors/managers and their job satisfaction when they perceived problems in the performance appraisal process. Numerous findings have accumulated in the field. What is

not conclusive is how supervisors evaluate the performance appraisal process, what problems they perceived, and whether or not an agency where supervisors perceived more problems have employees who also have more negative perceptions. These questions expand the discussions of performance appraisal in two dimensions. First, as supervisors are the nexus between an organization and employees, examining performance appraisal from supervisors' point of view allows the discussion of performance appraisal focusing on its role in the context of organizational management. Second, examining the relationship between supervisors' perceived problems and employees' negative perceptions allows the discussion of performance appraisal problems to be at the agency level. The discussion helps to identify how problems in the performance appraisal process actually affect agencies.

One question should be kept in mind when trying to predict employees' perceptions through supervisors because they may differ in terms of role differences in organization. Previous studies had dissimilar conclusions regarding whether employees and supervisors perceive satisfaction differently for performance appraisal. Mount (1983) found that employees perceive aspects of performance system in a more global way while supervisors are more sensitive to the rating process, such as appraisal forms and types of rating. In other words, employees' satisfaction basically comes from their general experiences about performance appraisal, and supervisors' satisfaction is developed from the appraisal process they went through. Similar results were also found in the studies by Mount (1984) and Pooyan and Eberhardt (1989).

Chen (2009) studied supervisors' rating behaviors in Taiwan. He pointed out that supervisors may not appraise employees based on their true performance for managerial

strategies. For example, supervisors may appraise employees based on employees' potential to give them more opportunities for promotion or training. Supervisors also could rate an employee with an "A" only in terms of motivation. Younger or new employees are less likely to get an "A" because these employees are expected to receive more help from senior employees. If younger or new employees get an "A" and senior employees do not, senior employees will consider the situation to be unfair and their working motivation will be affected. In such cases, supervisors may see these rating strategies as not problematic even though these rating behaviors are not objective. However, these rating behaviors may still lead to inaccurate and unfair performance appraisal results for employees and may make employees have negative perceptions toward the appraisal system or the supervisors. In this case, supervisors' perceptions of problems in the performance appraisal process fail to predict employees' perceptions.

Cook and Crossman (2004) findings were inconsistent with previous studies. They found no difference in satisfaction level for the performance appraisal system associated with the roles in an organization. They argued that previous studies (Mount, 1983, 1984; Pooyan & Eberhardt, 1989) did not differentiate components of procedural justice, which is the source of satisfaction or dissatisfaction for a performance appraisal system, so the significant difference between employees' and supervisors' satisfaction may be associated with interactional justice and its influence on overall perceptions of performance appraisal (Cook & Crossman, 2004). However, in Cook and Crossman's (2004) model, they divided procedural justice into two sub-types: system procedural justice (SPJ) and process procedural justice (PPJ), which had no theoretical base. Therefore, their finding was questionable.

As previous studies suggested that supervisors perceive more procedural and technical components in the performance appraisal process, their perception of problems therein may become a clue to diagnosing performance appraisal systems. This study further explores whether supervisors' perceptions of problems in a performance appraisal process can predict employees' perceptions of the appraisal system, the supervisors, and the organization.

CHAPTER 3

RESEARCH QUESTIONS AND METHODS

Because supervisors play critical roles in the performance appraisal process, understanding supervisors' perspectives regarding the extent to which the issues discussed in the previous section are commonly encountered will help us to better understand difficulties in this important area of performance management. Therefore, this study addresses four central questions: (1) To what extent do supervisors perceive the performance process as problematic? (2) What aspects of performance appraisal do supervisors in federal agencies see as most problematic? (3) What factors can explain variation in supervisors' perceptions of the problematic nature of performance appraisal? (4) Are there differences in the aspects of performance appraisal seen as most problematic across agencies? (5) Do agencies where supervisor see performance appraisal as more problematic have employees who have more negative views on performance appraisal?

The first two questions were to address the extent of problems in performance appraisal. The third question was to address whom are easier to perceive problems than others. The fourth question was the third question aggregated to agency level. The fifth question was to address whether supervisors' perception can predict employees' perception.

DATA

As indicated earlier, this study utilizes data from the U.S. Merit Systems Protection Board (MSPB) Merit Principles Survey 2005. This survey was distributed to federal employees from 59 federal agencies in the summer and fall of 2005. A total of 36,925 public employees completed the survey, producing a response rate of approximately 50 percent. The survey identified perceived problems in the performance appraisal process, and allowed a comprehensive analysis of the extent and variance of these problems.

Even though that these data were collected over 10 years ago, these are the most recent data available that will allow us to examine supervisors' perceptions of problems in the performance appraisal process, and it is still in used for performance management and other organizational management studies within five years (Coggburn, Battaglio, & Bradbury, 2014; Jung, 2014a, 2014b; S. Kim & Park, 2014; T. Kim & Holzer, 2016; Kong & Barsness, 2016; Lavena, 2016; Rubin & Chiqués, 2015). In addition, the measurements used in this study have not been examined in any published studies in any forms (see Table 1). Furthermore, the technology of employee performance appraisal and the issues associated with it have not changed since the time of this survey. Problems perceived by federal supervisors in 2005 are likely to still be present today in the federal service or in other levels of government.

Table 1 Studies Using MSPB 2005 and the Measurements Used

Papers	Main Measurements
Lavena, C. F. (2016). Whistle-Blowing: Individual and Organizational Determinants of the Decision to Report Wrongdoing in the	<ul style="list-style-type: none">● Exercise Whistle-Blowing Behavior● Explanatory Variables

Federal Government. <i>The American Review of Public Administration</i> , 46(1), 113-136.	For Exercising Whistle-Blowing Behavior
Kim, T., & Holzer, M. (2016). Public Employees and Performance Appraisal: A Study of Antecedents to Employees' Perception of the Process. <i>Review of Public Personnel Administration</i> , 36(1), 31-56. doi:10.1177/0734371x14549673	<ul style="list-style-type: none"> ● Employees Acceptance Of Performance Appraisal System (Procedural Justice And Distributional Justice) ● Developmental Use Of Performance ● Quality Of The Supervisor–Employee Relationship ● Employee Participation In The Development Of Performance Standards ● Employee Perceived Empowerment
Kong, D. T., & Barsness, Z. I. (2016). Perceived Managerial (Remote Leader) Trustworthiness as a Moderator for the Relationship between Overall Fairness and Perceived Supervisory (Direct Leader) Trustworthiness. <i>Current Psychology</i> . doi:10.1007/s12144-016-9511-6	<ul style="list-style-type: none"> ● Perceived Supervisory Trustworthiness ● Perceived Managerial Trustworthiness ● Overall Fairness ● Control Variables
Rubin, E. V., & Chiqués, E. P. (2015). Where You Sit Is Where You Stand: Evaluating Manager and Employee Differences in Procedural Justice Perceptions in the U.S. Federal Government. <i>Administration & Society</i> , 47(5), 549-573.	<ul style="list-style-type: none"> ● Procedural Justice ● Levels Of Job Satisfaction ● Overall Fairness ● Filed A Complaint Survey
Jung, C. S. (2014a). Organizational Goal Ambiguity and Job Satisfaction in the Public Sector. <i>Journal of Public Administration Research & Theory</i> , 24(4), 955-981. doi:10.1093/jopart/mut020	<ul style="list-style-type: none"> ● Mission Comprehension Ambiguity
Jung, C. S. (2014b). Why Are Goals Important in the Public Sector? Exploring the Benefits of Goal Clarity for Reducing Turnover Intention. <i>Journal of Public Administration Research & Theory</i> , 24(1), 209-234.	<ul style="list-style-type: none"> ● Job-Goal Importance ● Organizational Goal Specificity
Cogburn, J. D., Battaglio, R. P., & Bradbury, M. D. (2014). Employee Job Satisfaction and Organizational Performance: The Role of Conflict Management. <i>International Journal of Organization Theory & Behavior</i>	<ul style="list-style-type: none"> ● Constructive Conflict Management ● Job Satisfaction ● Employee Perceptions Of Organizational

<p>(<i>PrAcademics Press</i>), 17(4), 497.</p> <p>Kim, S., & Park, S. M. (2014). Determinants of Job Satisfaction and Turnover Intentions of Public Employees: Evidence from US Federal Agencies. <i>International Review of Public Administration</i>, 19(1), 63-90. doi:http://dx.doi.org/10.1080/12294659.2014.887354</p>	<p>Performance</p> <ul style="list-style-type: none"> ● Job Satisfaction ● Turnover Intention
<p>Daley, D. M. (2012). Speak Softly and Carry a Big Stick: How Contract Representatives Deal with Problems. <i>International Journal of Organization Theory & Behavior</i> (<i>PrAcademics Press</i>), 15(3), 364-382.</p>	<ul style="list-style-type: none"> ● Contract Outcomes ● Contract Actions
<p>Cho, Y. J., & Lee, J. W. (2012). Performance Management and Trust in Supervisors. <i>Review of Public Personnel Administration</i>, 32(3), 236-259.</p>	<ul style="list-style-type: none"> ● Perceived Work-Unit Performance ● Perceived Agency Performance ● Performance Management ● Trust In Supervisors ● Self-Efficacy ● Individual Resources ● Organizational Resources ● Agency Experience ● Work Motivation ● Cognitive And Affective Trust
<p>Park, S. M. (2012). Toward the Trusted Public Organization. <i>The American Review of Public Administration</i>, 42(5), 562-590.</p>	<ul style="list-style-type: none"> ● Job-Goal Commitment ● Job-Goal Importance ● Job-Goal Specificity ● Mission Specificity
<p>Jung, C. S., & Rainey, H. G. (2011). Organizational Goal Characteristics and Public Duty Motivation in U.S. Federal Agencies. <i>Review of Public Personnel Administration</i>, 31(1), 28-47.</p>	<ul style="list-style-type: none"> ● Perceived Fairness Of Performance Appraisal ● Intrinsic Motivation
<p>Kim, S. E., & Rubianty, D. (2011). Perceived Fairness of Performance Appraisals in the Federal Government: Does It Matter? <i>Review of Public Personnel Administration</i>, 31(4), 329-348. doi:10.1177/0734371X11428903</p>	<ul style="list-style-type: none"> ● Supervisory Trustworthiness ● Ability ● Integrity ● Benevolence
<p>Cho, Y. J., & Lee, J. W. (2011). Perceived Trustworthiness of Supervisors, Employee Satisfaction and Cooperation. <i>Public Management Review</i>, 13(7), 941. doi:10.1080/14719037.2011.589610</p>	<ul style="list-style-type: none"> ● Assisting Exercise Of Right
<p>Bradbury, M. D., Battaglio, R. P., & Crum, J. L. (2010). Continuity Amid Discontinuity?</p>	

George W. Bush, Federal Employment Discrimination, and “Big Government Conservatism”. <i>Review of Public Personnel Administration</i> , 30(4), 445-466. doi:10.1177/0734371X10381486	<ul style="list-style-type: none"> ● Refuse To Obey ● Reporting Sexual Harassment
--	---

Since the survey was conducted early in the second term of President George W. Bush, it may provide us also with insight into effects of the Bush Administration personnel management reforms on supervisors’ perceptions of performance appraisal problems. Consistent with the New Public Management Reform, the management of the newly formed Department of Homeland Security (DHS) was granted substantial personnel management flexibility. The passage of the Homeland Security Act of 2002 exempted DHS employees from key provisions of Title 5 of the U.S. Code, which governs personnel management across the federal government (Brook & Cynthia, 2007; Kellough, Nigro, & Brewer, 2010; Riccucci & Thompson, 2008). According to the Homeland Security Act, the DHS merged 22 domestic federal agencies and 170,000 employees (Brook & Cynthia, 2007; Kellough et al., 2010). A new system of personnel management was devised for the DHS (Brook & Cynthia, 2007), and the greatest feature of this new system was that DHS was granted substantial autonomy with respect to employee performance appraisals, labor relations, compensation, and many other facets of human resource administration (Brewer & Kellough, 2008; Kellough et al., 2010). How this reform may have DHS supervisors’ perceptions of problems with performance appraisal is examined in the subsequent analysis¹.

¹ The Bush Administration also implemented similar dramatic personnel reforms in the Department of Defense, but those reforms were not implemented until after MSPB 2005 was collected, and as a result, this study does not attempt to assess the effect of those reforms on supervisory perceptions of performance appraisal.

VARIABLES AND METHODS

This study took two levels of analysis to answer the five research questions specified above. In the first level, the study investigated the extent and the variation of errors perceived by supervisors (supervisors) in the appraisal process. The unit of analysis in the first level was the supervisor. In the second level, the unit of analysis was the agency. The study analyzed the variation of the errors perceived by supervisors across the federal agencies and evaluated the impacts of these errors on employees of each agency. Different research questions were answered with different methods (see Table 2). These methods were further elaborated below.

Table 2 Research Questions and Methods

Level	Unit of Analysis	Questions	Methods
One	Supervisor	1. To what extent do supervisors perceive the performance process as problematic?	Descriptive statistics
		2. What aspects of performance appraisal do supervisors see as most problematic among all supervisors and within agencies?	Descriptive statistics
		3. What factors can explain variation in supervisors' perception of the problematic outcome of performance appraisal?	OLS
Two	Agency	4. Are these differences in the items seen as most problematic across agencies?	OLS
		5. Do agencies where supervisor see performance appraisal as more problematic have employees who: <ul style="list-style-type: none"> a. Do not trust supervisors to assess performance fairly b. Do not trust managers above immediate supervisor to assess performance fairly c. Do not understand the basis for performance ratings d. Believe pay is accurately connected to performance e. Have lower satisfaction with how the performance appraisal is conducted f. Lower job satisfaction g. Higher intent to turnover 	OLS

Level One: Supervisor as the Unit of Analysis

In level one, this study evaluated the extent of supervisors' perceived problems in performance appraisal processes and how the perceived problems varied with the attributes of supervisors. The unit of analysis in this level was the supervisor. Only respondents who identified themselves as supervisors, managers, and executives were included in the analysis. The first three research questions were answered in level one of the analysis.

Measurement of Perceived Problems

On the MSPB survey, supervisors were asked to indicate whether they considered each of the 9 issues outlined above problematic in the performance appraisal process. Respondents could check multiple items if they perceived more than one of the issues listed presented a problem. Those items checked by respondents were coded as “1” while those unchecked were coded “0.” To gain insight into the structure of supervisors’ responses on these items, the data were examined via principle components analysis which extracted four factors or components. This study labels these four components “administrative problems,” including lack of information, lack of time, lack of training, and documentation requirements; “managerial problems,” including lack of authority and lack of support; “distributive problems,” including inflated ratings and forced quotas; and “rating standards problems,” reflected in a perception of flawed standards (See Table 3).

This study generated index scores for each of these components through a weighted sum of scores method (DiStefano, Zhu, & Mîndrilă, 2009). In essence, the loadings of each of the nine items were used to weight each item before responses were summed for each of the four components. Only loading values above 0.3 were included in the calculation. For example, if a respondent checked yes (coded as “1”) on each of the items comprising the component 1, his/her index score on that component would be the sum of 1 x the factor loadings of the items comprising that factor (lack of information, lack of time, lack of training, and documentation requirements). From Table 3, this value would be:

$$(1 * .6151) + (1 * .5435) + (1 * .4285) + (1 * .3506) = 1.9377$$

Because negative responses on the nine problem items are coded as zeros, no values would be added for those items in the summation process. For those items whose factor loadings are negative, absolute values are used to generate index scores (since an affirmative response represents more of a potential problem rather than less of that problem even when the loading is negative). When items loaded on more than one factor, this study uses only the highest loading. The sum of the four component index scores is used to produce a total problem index. Thus, this study has five indices that become the dependent variables in subsequent regression analyses.

Table 3 Factor Analysis of Perceived Performance Appraisal Problems*

Component	Problem Items	Component Loadings			
		1	2	3	4
Administrative Problems	Lack of Time	0.6151	0.0294	-0.0236	-0.0276
	Lack of Info. Doc.	0.5435	-0.0931	-0.1459	-0.1154
	Requirements**	0.4285	0.0613	0.3333	-0.0725
	Lack of Training**	0.3506	0.062	-0.0549	0.3411
Managerial Problems	Lack of Support	-0.0544	0.704	0.1021	-0.1057
	Lack of Authority	0.0704	0.6517	-0.0821	0.1329
Distributive Problems	Inflated Ratings	-0.0752	0.1032	0.7399	-0.0393
	Forced Quotas	-0.0683	0.2277	-0.5472	-0.13
Rating Standards Problems	Flawed Standards	-0.0395	-0.0058	0.0055	0.9039
Eigenvalue***		1.7055	1.3716	1.0658	0.9949
Cumulative Variance		0.1895	0.3419	0.4603	0.5709

*Extraction method: Principle component analysis. Rotation method: Varimax.

**The values in boldface show that the survey questions measure four different types of appraisal problems. These bolded component loadings are used as weights to generate subsequent index scores for further analysis. Note that the items “Lack of training” and “documentation requirements” each have two component loadings greater than 0.3. As a

more clear result could not be found after rotations, this study dropped the lower component loadings and let these two problem items load on the first component only.

***The eigenvalue on the fourth component is slightly lower than 1 but regardless, this study opted to select it. The inflection point on a scree plot is at eigenvalue 5, which suggests that researchers should keep the components corresponding to eigenvalue to the left of eigenvalue 5 (eigenvalue 5 not included). These four components identified account for 57% of the variance.

Independent Variables

To gain further insight into supervisors' perceptions of problems in performance appraisal, this study controls for a series of variables that describe supervisors' agencies, performance appraisal designs within their agencies, and their demographic features.

The design of performance appraisal system affects supervisors' perception of problems. For example, the numbers of rating levels may have impacts on supervisors' judgments (Grote, 2002, pp. 156-157). Two rating levels usually indicate unacceptable and fully successful. In a two-level rating, the raters only have to determine whether a specific employee's performance satisfy the critical elements of the performance goals; they do not have to decide the levels of successful (OPM, 2011). Three rating levels, comparing with rating levels more than three, are easier for raters to categorize performance. They have fewer choices, and therefore the decisions can be more reliable but less distinguished (Grote, 2002, p. 158). Having four levels of ratings means there is no middle rating. In other words, no so called "average." This design eliminates central tendency error but may result in skewed positive or negative ratings (Grote, 2002, p. 158). Five rating levels are consistent with "A-B-C-D-F" school grades models, which most raters are familiar with, and therefore most raters believe they can differentiate among five levels of performance. However, the middle rating in five level ratings is

usually perceived negative as a “C” student, which may lead to lower employees’ satisfaction. Additionally, this design is more consistent with bell curve distribution which may encourage central tendency (Grote, 2002, p. 158). The rating level is measured by one question in the MSPB 2005. Supervisors were asked “how many rating levels are in your performance appraisal system.” They may choose from two to six levels, or answer “don’t know.” Each of these levels is put in the models as dummy variables, and “two rating levels” are omitted as the reference group. This study expects supervisors who use five rating levels will perceive less problems.

Whether an agency conducts performance-based rewards and objective measurements may also impacts supervisors’ perceived problems in performance appraisal process. Performance-based rewards and objective measurements require supervisors to develop performance rating criteria and standards for individual employees. As a results, more subordinates means more work burden. Supervisors may perceive more administrative costs when the appraisal results are objective and are used for reward distributions (M. Thompson, 1995, p. 7). Performance-based rewards and objective measurements may require support from upper management to acquire financial support and authority; therefore, a system with performance-based rewards and objective measurements may lower managerial problems. Agencies which apply performance-based rewards and objective measurement may also have less distributive and rating standards problems because the system provide the agencies an incentive to develop a sound rating system in which employees perceive accuracy and fairness. Performance-based rewards is measured by a question where the supervisors answered the degree of agreement of a statement, “recognition and rewards are based on performance in my

work unit.” Objective measurements is measured by a question, “objective measures are used to evaluate my performance.” For both questions, the respondents’ answers are ranged from one, strongly disagree, to five, strongly agree.

The following variable this study controls for in the models is whether respondent supervisors are located in an agency’s headquarters office (typically in Washington D.C.) or in field offices in regional centers across the country. In general, personnel procedures in headquarters offices are expected to be more standardized and structured (Gore, 1993; Yuen & Kee, 1993). This characteristic of management in headquarters locations may cause supervisors working in those locations to perceive less flexibility and as a result, more managerial problems, including problems with performance appraisal.

In addition, supervisors’ responding to the MSPB survey include those classified as line supervisors, managers with hiring authority, and senior executives. The roles these people play within their organizations differ based on the nature of their positions (Williams, Christensen, LePere-Schloop, & Silk, 2015), and this study expects that as the level of their positions increases (i.e., the position shifts from line supervisor to manager to executive) the respondent will perceive fewer problems with their agency’s performance appraisal process. Furthermore, years as supervisors may be also a factor that impacts supervisors’ perception of problems in the performance appraisal process. As the longer they become supervisors, the more comfortable and familiar with the process; the comfort and familiar could reduce their perceptions of problems.

Previous studies have also found that demographic factors such as gender, age, and race may impact supervisors’ opinions of management systems in their organizations (Baxter, 2012; Johnson & Ronan, 1979; Lewis, 1997; Natbandian, 1981). With respect to

performance appraisal, other research has found that female, younger, and non-white employees often do not fare as well as their male, older, and white colleagues in the appraisal process (Baxter, 2012; Johnson & Ronan, 1979; Lewis, 1997; Liden, Stiiweli, & Ferris, 1996; Natbandian, 1981; Ng & Feldman, 2008). As a consequence, this study expects to find that supervisors who are female, younger, or non-white will perceive more problems in the performance appraisal process than do other supervisors.

This study also controls for the supervisors' education levels. Education has often been found in the past to be strongly associated with employees job/work attitudes (Alonso & Lewis, 2001). This study believes that supervisors with more education will be more willing to express concern with performance appraisal procedures.

Finally, this study controls agencies to examine the variance across federal agencies. As noted earlier, agencies within the Department of Homeland Security operated under a different personnel management system which was regarded as more flexible. Because the new personnel system gave the DHS and its managers increased discretion and authority, this study expects that DHS supervisors will perceive few performance appraisal problems than will supervisors in other agencies. To examine the proposition, 59 federal agencies are included in the models as dummy variables, and DHS agencies are omitted as the reference group. By doing so, the extent of problems perceived by supervisors in each agency is compared with those in the DHS agencies. Additionally, this study is allowed to identify which agencies have more or less problems than the DHS agencies. Table 4 provides descriptive statistics on all dependent and independent variables in the models.

Table 4 Descriptive Statistics for Variables in the Models in the Level One Analysis

Variable	N.	Mean	SD	Min	Max
Administrative Problem Index	2392	0.30	0.42	0.00	1.94
Managerial Problem Index	2392	0.35	0.46	0.00	1.36
Distributive Problem Index	2392	0.50	0.39	0.00	1.29
Standards Problem Index	2392	0.43	0.45	0.00	0.90
Total Problem Index	2392	1.58	0.88	0.00	5.48
Rating Levels	2278	3.86	1.36	2.00	6.00
Performance Based Reward	2386	3.34	1.18	1.00	5.00
Objective Measurement	2312	2.96	1.19	1.00	5.00
Headquarter (headquarter=1, field=0)	2351	0.28	0.45	0.00	1.00
Position (supervisor=1, manager=2, executive=3)	2385	1.48	0.61	1.00	3.00
Years Being Supervisors	2386	11.65	8.18	0.00	42.00
Female (female=1, male=0)	2360	0.36	0.48	0.00	1.00
Age	2334	50.45	7.38	26.00	77.00
White (white=1, non-white=0)	2392	0.78	0.41	0.00	1.00
Education (high school=1, associate=2, college=3, master=4, doctorate=5)	2346	3.21	1.16	1.00	5.00
Agency (59 agencies used as dummy variables)	2363	29.32	17.83	1.00	59.00

Level Two: Agency as the Unit of Analysis

Questions four and five are answered at level two. In level two, this study analyzed the variation of perceived problems across federal agencies and analyzed the impacts of the perceived problems on employee attitudes. The unit of analysis is agency. The number of observations in the models is 59, which is the number of federal agencies investigated in the MSPB 2005.

Question Four: Are there differences in supervisor perceptions of performance appraisal problems across agencies?

To answer this question, this study aggregates all the variables describing an agency and its performance system designs in the first level models and uses them as independent variables in series of OLS models where the means of the problems indices of each agencies are the dependent variables (see Table 5). These independent variables are numbers of rating levels, whether having performance based rewards, whether using objective measurements, being a DHS agency, and working in headquarters.

Table 5 Variables and Descriptive Statistics of Question Four

Variable	Description	N.	Mean	SD	Min	Max
Administrative Problem Index	Means of factor scores	59	0.29	0.11	0.00	0.48
Managerial Problem Index	Means of factor scores	59	0.36	0.10	0.00	0.62
Distributive Problem Index	Means of factor scores	59	0.49	0.12	0.23	0.76
Rating Standards Problem Index	Means of factor scores	59	0.42	0.11	0.00	0.69
Total Problem Index	Means of factor scores	59	1.56	0.18	0.74	1.90
Rating Level (supervisor)	Mean of rating level	59	3.86	0.79	2.24	5.14
Performance-based Rewards	Mean of rating level	59	3.37	0.38	2.31	5.00
Objective Measurements	Mean of rating level	59	2.96	0.32	2.00	3.63
DHS	DHS=1, non-DHS==0	59	0.12	0.33	0.00	1.00
Headquarter (supervisor)	Proportion of headquarter supervisor	59	0.24	0.20	0.00	0.91

Note: Only supervisors were analyzed in this model. For example, headquarter (supervisor) means the proportion of supervisors working in headquarter in an agency.

Mean of the administrative problem index, managerial problem index, distributive problem index, rating standards problem index, and total problem index are the dependent variables of the five models respectively. The five independent variables mentioned earlier are presented in the form of proportions or means. For those variables measured by Likert scales, means of the variables in each agency are used in the study.

For example, the mean of using performance-based rewards in the Food Safety and Inspection Service is 2.97. Then the agency is coded as “2.97” in the variable performance-based rewards. Additionally, to understand whether the Bush administrative reform had impacts on the extent of supervisors’ perceived problems in performance appraisal, an variable named “DHS” was included as an independent variable to examine whether the agency was affected by HSA 2002 or not. By doing so, all of the variables in this model were continuous, except for “DHS,” which was binary (DHS=1, non-DHS=0). The variable of headquarters is presented in the form of proportions. For example, the proportion of supervisors working in the headquarters in the Air Force is 6.5%, and that in the Navy is 18.2%. Then Air Force is coded as “.065” in the variable headquarter, and Navy is coded as “.182”.

Question Five: Do agencies where supervisors see performance appraisal as more problematic have employees who have more negative views on performance appraisal?

In question five, the unit of analysis remained to be agency. Because question five answers questions about employee perceptions, only non-supervisor’s (supervisor=0) opinion will be selected into analysis.

A set of dependent variables that may be affected by supervisors’ perceived problems with performance appraisal are investigated, such as employee’s trust of supervisors to give a fair rating (Dirks & Ferrin, 2002; Fulk et al., 1985; Mayer & Davis, 1999; McCauley & Kuhnert, 1992; Nair & Salleh, 2015; Pichler, 2012; Swiercz, Bryan, Eagle, Bizzotto, & Renn, 2012), trust of managers to give a fair rating (Daley, 1992, p.

52; Farndale & Kelliher, 2013; Nair & Salleh, 2015; Park, 2012), employees' trust about getting the right pay (Schay, 1988; Wright et al., 2001), satisfaction about rating standards (Colquitt, 2001; Gabris & Ihrke, 2001; Jawahar, 2007; Jepsen & Rodwell, 2009), satisfaction about the performance appraisal process (Colquitt, 2001; Gabris & Ihrke, 2001; Jawahar, 2007; Jepsen & Rodwell, 2009), job satisfaction (Colquitt, 2001; Cravens, Goad Oliver, Shigehiro, & Stewart, 2015; Daley, 1988; Dusterhoff, Cunningham, & MacGregor, 2014; Gabris & Ihrke, 2001; Jawahar, 2007; Jepsen & Rodwell, 2009; Swiercz et al., 2012), and turnover intention (Brewer & Kellough, 2008; Cho & Lewis, 2012; Kellough & Lou, 1993; Roberts, 1994b). Measurements of these dependent variables are found in Table 6.

Beliefs in receiving the right pay, satisfaction with the performance appraisal process, and satisfaction with performance appraisal standards are measured by more than one indicator. For these variables, a Cronbach's α analysis and principle components analysis (PCA) are conducted to ensure these measurements are measuring the same variables. All of these variables have Cronbach's α coefficient over .7 (see Table 6), which is an acceptable reliability coefficient (Nunnally, 1978). The reliabilities of these variables are also supported by the results of principle components analysis. Predicted factor scores (regression methods) of these variables are used in the OLS models for further analysis. The results of PCA are found in the Table 6.

To aggregate to the agency level, means of these dependent variables are used in the OLS models. Among these variables, beliefs in receiving the right pay, satisfaction with the performance appraisal process, and satisfaction with performance appraisal standards, which are predicted by the factor scores, are used their predicted factor scores

to calculate the means. Trust of supervisors, trust of managers, job satisfaction, and turnover intention, which are measured by one single measurement in a five-point Likert scale, are generated by calculating the means by agency. As these dependent variable are continuous, all of the models are suitable for OLS models (Kennedy, 2008).

Four problem indices are the major independent variables. Demographic variables are controlled in the analysis. Control variables included agency type (DHS agencies or not), working locations (headquarters or field), age, gender, race, and education level. Only non-supervisors' data are included in the analysis at this level.

The mean of the total problems index, administrative problem index, managerial problem index, distributive problem index, and rating standard problem index of each agency are the dependent variables of the five models respectively. To understand whether the Bush administrative reform has impacts on the extent of supervisors' perceived problems in performance appraisal, a variable named "DHS" is included as an independent variable to examine whether the agency is affected by HSA 2002 or not. By doing so, all of the variables in this model are continuous, except for "DHS" which was binary (DHS=1, non-DHS=0). The other independent variables are headquarters, age, gender, race, and education level, presented in the form of proportions or means. For example, the proportion of females in the Air Force is 26% and that in the Navy is 28%. Then Air Force is coded as ".26" in the variable gender (female), and Navy was coded as ".28". Descriptive statistics of all variables used in the step two model is presented in Table 6.

Table 6 Dependent Variables and Measurements for Question Five

Variables	Measurements	Cronbach's α	N.	Mean	SD	Min	Max
Trust of supervisors to give a fair rating	I trust my supervisor to fairly assess my performance and contributions. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree		59	3.81	0.15	3.43	4.09
Trust of managers to give a fair rating	I trust managers above my immediate supervisor to fairly assess my performance and contributions. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree		59	3.28	0.20	2.67	4.00
Believing pay is accurately connected to performance	Please indicate your level of agreement or disagreement with each of the following statements about your pay and awards: 1. My organization takes steps to ensure that employees are appropriately paid and rewarded. 2. If I perform well, it is likely I will receive a cash award or pay increase. 3. I am satisfied with the recognition and awards I receive for my work. 4. Overall, I am satisfied with my pay. To what extent do you think your supervisor will exercise each of the following authorities in a fair and effective manner 1. Determining pay increases and awards.	.832	59	0.03	0.45	-0.91	1.49
Satisfaction with performance appraisal standards	Please indicate your level of agreement or disagreement with each of the following statements about job performance: 1. I understand the basis for my most recent performance rating. 2. The standards used to appraise my performance are appropriate. 3. I participate in setting standards and goals used to evaluate	.880	59	0.02	0.34	-0.69	1.19

Variables	Measurements	Cronbach's α	N.	Mean	SD	Min	Max
Satisfaction with performance appraisal process	my job performance.	.957	59	0.03	0.37	-0.81	1.01
	4. I understand what I must do to receive a high performance rating.						
	5. I have sufficient opportunities (such as challenging assignments or projects) to earn a high performance rating.						
	Please indicate your level of agreement or disagreement with each of the following statements about your supervisor and agency leadership:						
	1. Discussions with my supervisor about my performance are worthwhile.						
	2. My supervisor keeps me informed about how well I am doing.						
	3. My supervisor provides constructive feedback on my job performance.						
	4. My supervisor provides timely feedback on my job performance.						
	5. My supervisor provides coaching, training opportunities, or other assistance to help me improve my skills and performance.						
	6. I understand how my supervisor will evaluate my performance.						
Job satisfaction	7. My supervisor rates my performance fairly and accurately.		59	3.72	0.15	3.29	4.08
	8. My supervisor is held accountable for rating employee performance fairly and accurately.						
	In general, I am satisfied with my job.						
	1. Strongly disagree						
	2. Disagree						
	3. Neither agree nor disagree						
Turnover Intention	4. Agree		59	2.13	0.28	1.00	3.11
	5. Strongly agree						
	How likely is it that you will leave your agency in the next 12 months?						
	1. Very Likely						
	2. Somewhat Likely						
	3. Neither Likely nor Unlikely						

Variables	Measurements	Cronbach's α	N.	Mean	SD	Min	Max
	4. Somewhat Unlikely						
	5. Very Unlikely						
	6. Don't Know/Can't Judge						
Administrative Problem	Factor scores		59	0.29	0.11	0.00	0.48
Managerial Problems	Factor scores		59	0.36	0.10	0.00	0.62
Distributive Problems	Factor scores		59	0.49	0.12	0.23	0.76
Rating Standards Problems	Factor scores		59	0.42	0.11	0.00	0.69
DHS	DHS=1, non-DHS==0		59	1.56	0.18	0.74	1.90
Headquarters (employee)	Proportion of headquarter employees		59	0.12	0.33	0.00	1.00
Age (employee)	Mean of employees' age		59	0.25	0.19	0.04	0.85
Female (employee)	Proportion of female employees		59	2.66	0.40	1.92	3.54
White (employee)	Proportion of white employees		59	0.47	0.13	0.25	0.74
Education (employee)	Mean of employees' education		59	47.54	2.42	40.43	51.76

Note: Only employees were analyzed in this model. For example, headquarters (employee) means the proportion of employees working in the headquarters of an agency

CHAPTER 4

RESULTS

FINDINGS

This dissertation evaluates the extent of problems in the performance appraisal process in the federal agencies, analyzes whom are easier to perceive problems than others, and answers whether supervisors' perception can predict employees' perceptions. In this session, research results are reported and a detailed discussion is followed.

The Extent of Problems

As noted earlier, 16.41% of the supervisors (N=2,392) said yes when asked if "During the past year did you rate any employee higher or lower than you believe the employee deserved?" Those supervisors were then asked to indicate which among a list of nine potential problems they saw a contributing to their inaccurate ratings. The median of problems perceived was two. In addition, 93.73% of these supervisors perceived four or fewer problems and 6.27% perceived more than five problems (Table 7).

Table 7 Problem Index Distribution

Problem Index	Freq.	Percent	Cum.
0	12,524	84.31	84.31
1	676	4.55	88.86
2	699	4.71	93.56

3	519	3.49	97.06
4	286	1.93	98.98
5	100	0.67	99.66
6	33	0.22	99.88
7	13	0.09	99.97
8	3	0.02	99.99
9	2	0.01	100
Total	14,855	100	

The extent to which problems were perceived at all also varied across agencies. For example, only 8.31% of supervisors in the Natural Resource and Conservation Service reported that they perceived problems in the performance appraisal process within in their agency, while 39.11% of supervisors in the General Service Administration (not including public building service) perceived problems.

To analyze the extent problems across agencies, the problem index of each agency is ranked and reported in Table 8. The index score is the mean of numbers of problems perceived by supervisors in an agency. The top 5 agencies which had the highest problem index scores are: Bureau of Customs and Border Protection, Department of Defense other (DOD other, not including Defense Contract Management Agency, Defense Finance and Accounting Service, and Defense Logistics Agency), Treasury other, National Oceanic and Atmospheric Administration, Environmental Protection Agency (EPA), and Department of Transportation other (DOT other, not including FAA). EPA and DOT other are tied at the fifth. These agencies has index scores greater than 2.60, while the average score is 2.33.

The bottom 5 agencies who have the lowest problem means are Transportation Security Administration (TSA), U.S. Census Bureau, National Institute of Standards and Technology, Internal Revenue Service (IRS), and Executive Office of the U.S. Attorney. These agencies have problem index scores lower than 1.07 (the mean of the total 59 agencies is 2.33).

In terms of departments, some have agencies whose score rankings varied greatly. For example, in the Department of Commerce, the National Institute of Standards and Technology have the lowest score among the 59 agencies, while the National Oceanic and Atmospheric Administration are ranked top three. In the Department of Transportation (DOT), the Federal Aviation Administration (FAA) has a lower score than that of the 59 agencies, while DOT other is ranked number five. The problem index score in the Department of Homeland Security (DHS) also are not consistent. Out of seven of the DHS agencies, five of them have the average problem index scores lower than the mean of the total 59 agencies, except for the Bureau of Customs and Border Protection and the U.S. Secret Service. Additionally, while the Bureau of Immigration and Customs Enforcement and TSA's problem index score are in the lowest top 10, and the Bureau of Customs and Border Protection is ranked as top one. Of course, some agencies in the same department have close problem index scores, such as the Health and Human Service (HHS), whose sub agencies all have problem index scores equal to or slightly below the total average. Even with the consistency in the HHS, it can still be concluded that the extent of supervisors' perceived problems in the process varies across the sub agencies.

Table 8 Supervisors' Perceived Problems in Performance Appraisal Processes Index

Agency	Rank	Obs	Mean	Std.	Min	Max
DHS-Bureau of Customs and Border Protection	1	27	2.85	1.68	1	7
DOD-Other	2	44	2.77	1.51	0	6
Treas-Other	3	27	2.74	1.58	0	7
Com-National Oceanic and Atmospheric Administration	4	62	2.61	1.50	0	6
EPA	5	30	2.60	1.38	1	6
DOT-Other	5	102	2.60	1.25	0	7
Labor	7	49	2.59	1.50	0	7
Ag-Forest and Service	8	28	2.57	1.29	1	5
Navy-U.S. Marine Corps	9	30	2.57	1.74	0	7
GSA-Public Buildings Service	10	22	2.55	1.30	1	6
Just-Bureau of Prisons	11	28	2.54	1.29	1	6
Air Force	12	39	2.51	1.55	0	9
DOD-Defense Finance and Accounting	13	45	2.51	1.56	0	8
Federal Deposit Insurance Corporation	14	18	2.50	1.42	0	5
Int-Indian Affairs	15	42	2.50	1.09	0	5
Army-U.S. Army Corps of Engineers	16	56	2.48	1.37	0	6
VA-Benefit	17	40	2.48	1.43	0	7
Just-Alcohol, Tobacco, Firearms & Explosives	18	35	2.46	1.04	1	5
HUD	19	34	2.44	1.80	0	8
Army-Other	20	49	2.43	1.40	1	7
GSA-Other	21	70	2.43	1.42	0	9
DOD-Defense Contract Management Agency	22	60	2.42	1.46	0	6
DHS-U.S. Secret Service	23	12	2.42	1.16	0	4
Ag-Food Safety and Inspection Service	24	60	2.40	1.39	0	6
Int-National Park Service	25	33	2.39	1.22	1	5
OPM	26	72	2.39	1.35	0	6
Energy	27	34	2.38	1.54	0	6
Com-Other	28	47	2.34	1.26	0	5
HHS-Other	29	21	2.33	1.68	0	6
State	30	42	2.33	1.36	0	5
HHS-India Health Service	31	29	2.31	1.20	0	4
Int-Bureau of Land Management	32	13	2.31	1.03	1	4
Ag-Other Service	33	44	2.30	1.42	0	7
Int-Other	34	25	2.28	1.79	0	7

Agency	Rank	Obs	Mean	Std.	Min	Max
Ag-Natural Resource and Conservation Service	35	29	2.28	1.33	1	7
DHS-U.S. Coast Guard	36	29	2.28	1.36	1	5
Education	37	36	2.25	1.08	1	5
Navy-Other	38	35	2.23	1.00	0	4
HHS-CDC	39	53	2.21	1.46	0	7
NASA	40	21	2.19	1.40	0	4
DOD-Defense Logistics Agency	41	85	2.19	1.21	0	5
VA- Other	42	22	2.18	1.33	0	5
DOT-FAA	43	52	2.17	1.29	0	6
Just-Other	44	65	2.17	1.10	0	4
Treas-Office of Comptroller of Currency	45	51	2.16	1.19	0	5
DHS-Federal Emergency Management Agency	46	42	2.14	1.32	0	5
HHS-National Institute of Health	47	59	2.14	1.24	0	5
Come-Patent and Trademark Office	48	76	2.11	1.05	0	5
DHS-Other	49	42	2.10	1.25	0	6
SSA	50	76	2.08	1.48	0	7
VA-Health	51	45	2.07	1.19	0	6
Just-FBI	52	51	2.06	1.08	0	5
DHS-Bureau of Immigration and Customs Enforcement	53	12	2.00	1.35	0	5
Just-Drug Enforcement Administration	54	8	2.00	1.07	1	4
DHS-TSA	55	28	1.96	1.43	0	6
Com-Census	56	29	1.90	1.01	1	4
Com-National Institute of Standards and Technology	57	36	1.83	1.18	0	6
Treas-IRS	58	12	1.83	0.83	1	3
Just-Executive Office of the U.S. Attorney	59	1	1.00	.	1	1
Total		2,364	2.33			

Problematic Items

Figure 2 showed that flawed standards, inflated ratings, and lack of support were the most problematic issues for supervisors in the performance appraisal process. Among

those supervisors who had given inaccurate ratings, 53% of them indicated that inflated ratings were a problem; 48% perceived flawed standards as problematic, and 38% perceived a lack of support in their organizations. Other potential problems were identified as follows: documentation requirements (30%), forced quotas (20%), lack of authority (13%), lack of information (13%), lack of time (12%), and lack of training (7%).

Inflated rating and flawed standards were also reported as the most serious problems for most of the agencies. Inflated rating was ranked first by supervisors in 32 out of 59 of the federal agencies. 25 out of 59 of the organizations were reported flawed standards as their most serious problem. As they were found as most problematic in both the supervisor and the agency level, inflated rating and flawed standards were the top two problems in performance appraisal process.

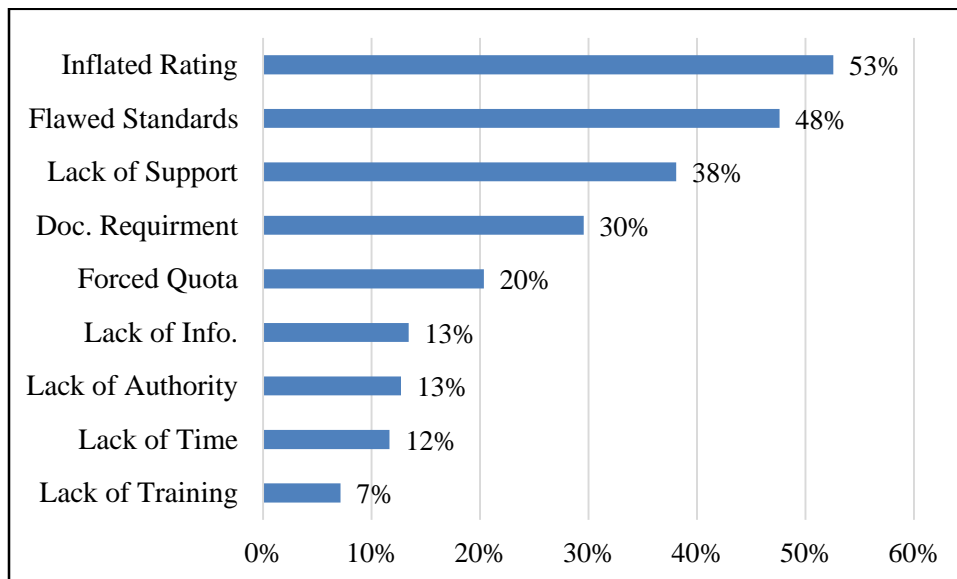


Figure 2 Ranking of Problems

The degree to which each potential problem was perceived varied across agencies as well (see Table 9). As an example, 76% of the supervisors in the Office of Personnel Management (OPM) who admitted to errors in their ratings reported that they perceived flawed standards as problematic in their agencies, while the average proportion of supervisors across all agencies seeing this issue as a problem is 48%. The rate also differed in the agencies in the same department. For example, in the Department of Commerce, the rates of perceiving flawed standards were lower than the average (48%) in the U.S. Census Bureau, Patent and Trademark Office, and the National Institute of Standards and Technology, while the rates were 51% and 55% respectively in the Commerce other and National Oceanic and Atmospheric Administration.

Table 9 Problematic Items by Agencies

Agency	Flawed Standards	Lack of Information	Lack of Time	Lack of Training	Lack of Authority	Lack of Support	Inflated Rating	Forced Quota	Doc. Requirement
Average	48%	13%	12%	7%	13%	38%	53%	20%	30%
Ag-Food Safety and Inspection Service	43%	13%	17%	10%	12%	37%	62%	7%	40%
Ag-Forest and Service	64%	14%	14%	14%	11%	39%	43%	4%	54%
Ag-Natural Resource and Conservation Service	52%	14%	24%	7%	10%	38%	41%	3%	38%
Ag-Other Service	43%	5%	11%	9%	23%	43%	59%	11%	25%
Air Force	44%	8%	8%	10%	15%	31%	77%	33%	26%
Army-U.S. Army Corps of Engineers	48%	20%	16%	7%	7%	34%	66%	11%	39%
Army-Other	49%	10%	12%	8%	10%	43%	73%	2%	35%
Com-Census	24%	0%	0%	3%	7%	48%	24%	79%	3%
Com-National Institute of Standards and Technology	47%	11%	17%	6%	8%	22%	36%	17%	28%
Com-National Oceanic and Atmospheric Administration	55%	19%	13%	3%	21%	37%	61%	31%	29%
Come-Patent and Trademark Office	36%	11%	3%	1%	12%	41%	50%	22%	36%
Com-Other	51%	19%	9%	15%	6%	32%	53%	19%	34%
DOD-Defense Contract Management Agency	52%	17%	7%	8%	12%	40%	57%	28%	23%
DOD-Defense Finance and Accounting	62%	22%	16%	11%	18%	24%	40%	22%	36%
DOD-Defense Logistics Agency	38%	15%	7%	4%	12%	35%	65%	19%	25%
DOD-Other	41%	20%	7%	2%	32%	61%	48%	45%	23%
Education	39%	8%	6%	0%	11%	47%	53%	44%	17%
Energy	53%	6%	21%	12%	15%	44%	44%	9%	35%
EPA	50%	7%	13%	3%	20%	57%	37%	53%	33%

Agency	Flawed Standards	Lack of Information	Lack of Time	Lack of Training	Lack of Authority	Lack of Support	Inflated Rating	Forced Quota	Doc. Requirement
Average	48%	13%	12%	7%	13%	38%	53%	20%	30%
Federal Deposit Insurance Corporation	44%	17%	17%	6%	22%	56%	28%	28%	33%
GSA-Public Buildings Service	50%	18%	18%	9%	5%	45%	27%	50%	32%
GSA-Other	60%	11%	10%	4%	4%	36%	91%	17%	10%
HHS-CDC	58%	19%	13%	17%	6%	26%	38%	13%	30%
HHS-India Health Service	48%	3%	10%	7%	10%	38%	55%	10%	48%
HHS-National Institute of Health	53%	3%	10%	7%	8%	29%	68%	3%	34%
HHS-Other	67%	14%	14%	14%	24%	57%	29%	10%	24%
DHS-Bureau of Customs and Border Protection	63%	22%	11%	15%	11%	48%	59%	0%	56%
DHS-Bureau of Immigration and Customs Enforcement	42%	8%	0%	17%	17%	50%	42%	8%	25%
DHS-Federal Emergency Management Agency	62%	12%	7%	12%	7%	43%	21%	17%	26%
DHS-TSA	32%	11%	11%	11%	4%	29%	71%	11%	18%
DHS-U.S. Coast Guard	45%	0%	0%	0%	17%	62%	55%	21%	28%
DHS-U.S. Secret Service	50%	25%	8%	17%	0%	42%	75%	8%	17%
DHS-Other	43%	17%	12%	2%	2%	31%	74%	14%	14%
HUD	50%	18%	18%	9%	12%	47%	47%	21%	24%
Int-Bureau of Land Management	46%	0%	31%	23%	0%	31%	46%	8%	31%
Int-Indian Affairs	43%	12%	24%	12%	17%	50%	48%	5%	40%
Int-National Park Service	39%	24%	21%	6%	15%	45%	36%	9%	42%
Int-Other	40%	20%	12%	12%	12%	32%	60%	4%	36%
Just-Alcohol, Tobacco, Firearms & Explosives	51%	11%	6%	0%	17%	34%	71%	29%	26%

Agency	Flawed Standards	Lack of Information	Lack of Time	Lack of Training	Lack of Authority	Lack of Support	Inflated Rating	Forced Quota	Doc. Requirement
Average	48%	13%	12%	7%	13%	38%	53%	20%	30%
Just-Bureau of Prisons	50%	18%	7%	14%	7%	43%	68%	18%	29%
Just-Drug Enforcement Administration	25%	0%	0%	13%	13%	38%	88%	0%	25%
Just-Executive Office of the U.S. Attorney	0%	0%	0%	0%	0%	0%	100%	0%	0%
Just-FBI	41%	8%	2%	6%	14%	39%	61%	10%	25%
Just-Other	48%	9%	3%	5%	22%	43%	38%	28%	22%
Labor	51%	18%	18%	6%	16%	41%	27%	55%	27%
NASA	52%	10%	19%	10%	14%	19%	48%	14%	48%
Navy-U.S. Marine Corps	63%	23%	17%	17%	13%	40%	33%	30%	20%
Navy-Other	34%	14%	6%	0%	20%	37%	43%	54%	14%
OPM	76%	7%	14%	0%	18%	35%	39%	19%	31%
SSA	32%	17%	17%	7%	9%	32%	70%	1%	24%
State	57%	5%	7%	5%	19%	40%	26%	50%	24%
DOT-FAA	35%	6%	12%	8%	12%	44%	35%	44%	23%
DOT-Other	34%	23%	15%	6%	10%	28%	75%	12%	55%
Treas-IRS	17%	17%	0%	0%	17%	67%	25%	33%	8%
Treas-Office of Comptroller of Currency	47%	14%	8%	10%	8%	35%	71%	12%	24%
Treas-Other	63%	22%	22%	4%	26%	41%	41%	33%	26%
VA-Benefit	53%	13%	20%	10%	30%	38%	30%	13%	45%
VA-Health	58%	11%	11%	9%	0%	31%	42%	16%	29%
VA- Other	50%	18%	14%	9%	9%	32%	55%	14%	18%

Inflated rating and flawed standards (Table 9) were two significant problems that could be the determinants of whether an agency's problem index score was high. Many high ranking agencies ranked inflated ratings or flawed standards in the top 10 in terms of their means of numbers of problems. In other words, when an agency has a large percentage of supervisors perceiving inflated ratings or flawed standards, the means of numbers of problems of that agency was easily ranked high.

Lack of support, forced quota, and documentation requirements were the problems, other than inflated rating and flawed standards, which had more than two agencies where more than 50% of supervisors reported this. In eight agencies—DOD other (61%), EPA (57%), Federal Deposit Insurance Corporation (56%), HHS other (57%), Bureau of Immigration and Customs (50%), U.S. Coast Guard (62%), Indian Affairs (50%), and IRS (67%)— over half of the supervisors who perceived problems reported that they perceived a lack of support. The U.S. Census Bureau, EPA, and Navy other were the three agencies who had more than 50% of supervisors that perceived forced quotas. Forest and Service, Bureau of Customs and Border Protection, and DOT other, were the three agencies which had more than 50% of supervisors that perceived documentation requirements. Compared with inflated ratings and flawed standards, lack of support, force quotas, and documentation requirements had lower reported rates but still worth noting.

Lack of information, lack of training, and lack of time were three minor problems. Most of the agencies had less than 20% of supervisors who perceived these problems. Some agencies even had no supervisors who reported that they had the problems.

Factors Associated with Supervisors' Perceptions of Problems

Table 10 presents the results of five OLS models, in which the problem indices are the dependent variables². In model 1, performance-based rewards, age and education levels are positively associated with the administrative problem index, indicating that supervisors applying performance-based reward, being older and higher educated perceive more lack of information, lack of time, lack of training and documentation requirements. Objective measurement is significant at .1 level. Although failed to significant at .05 level, it does show a positive relationship with the administrative index, meaning that objective measurements also increase the perception of administrative problems. The results indicate that applying performance-based reward and objective measurements may lead to higher administrative costs.

Table 10 OLS Regression Model

	(1) Administrative Problem	(2) Managerial Problem	(3) Distributive Problem	(4) Rating Standards Problem	(5) Total Problem
Rating Levels					
3	-0.053	0.001	0.023	-0.100 ***	-0.129 *
4	-0.054	-0.003	0.093 ***	-0.136 ***	-0.101
5	-0.012	-0.028	0.064 **	-0.134 ***	-0.110 *
6	-0.043	0.061	0.011	-0.102 **	-0.072
Performance Based Reward	0.019 **	-0.076 ***	-0.029 ***	-0.024 ***	-0.110 ***
Objective Measurement	0.016 *	-0.050 ***	-0.003	-0.037 ***	-0.074 ***
Headquarters	0.008	0.027	0.069 ***	-0.067 ***	0.037
Position	0.020	-0.046 ***	0.029 **	0.027	0.030
Years Being Supervisors	-0.001	-0.001	0.000	-0.003 **	-0.004
Female	0.002	0.017	0.021	-0.039 *	-0.001
Age	-0.005 ***	0.002	0.000	-0.004 **	-0.007 **

² These five dependent variables were created from the results of the principle component analysis by using weighted sum scores method. The default in STATA to generate a factor score is using regression scores. The method was also used to create the five dependent variables and these variables were analyzed in OLS models. The results were similar with what reported in Table 10.

	(1) Administrativ e Problem	(2) Managerial Problem	(3) Distributive Problem	(4) Rating Standards Problem	(5) Total Problem
White	-0.017	0.010	0.062 ***	-0.009	0.046
Education	-0.021 **	-0.015	0.026 ***	-0.007	-0.018
_cons	0.433 ***	0.726 ***	0.380 ***	0.919 ***	2.459 ***
Agency					
Ag-Food Safety and Inspection Service	0.214 ***	0.021	-0.086	0.024	0.172
Ag-Forest and Service	0.169	0.030	-0.168 **	0.164	0.194
Ag-Natural Resource and Conservation Service	0.162	0.027	-0.111	-0.048	0.030
Ag-Other Service	0.005	0.144	-0.041	-0.018	0.089
Air Force	-0.023	-0.025	0.324 ***	-0.044	0.232
Army-U.S. Army Corps of Engineers	0.176 ***	0.014	0.058	0.052	0.300 **
Army-Other	0.075	0.103	0.031	0.046	0.256
Com-Census	-0.188 **	0.109	0.081	-0.112	-0.111
Com-National Institute of Standards and Technology	0.043	-0.030	-0.139	-0.022	-0.147
Com-National Oceanic and Atmospheric Administration	0.066	0.068	0.033	0.153 **	0.320 **
Come-Patent and Trademark Office	-0.016	0.060	-0.014	-0.128 **	-0.099
Com-Other	0.136	-0.073	0.001	0.043	0.107
DOD-Defense Contract Management Agency	0.016	0.043	0.097	0.070	0.226
DOD-Defense Finance and Accounting	0.202 ***	0.038	-0.027	0.160 **	0.374 **
DOD-Defense Logistics Agency	0.017	0.044	0.064	-0.016	0.110
DOD-Other	0.044	0.319 ***	-0.002	0.013	0.374 **
Education	-0.042	0.094	0.093	-0.011	0.133
Energy	0.141	0.110	-0.172 **	0.089	0.168
EPA	0.070	0.163	0.012	0.010	0.255
Federal Deposit Insurance Corporation	0.119	0.292 **	-0.082	0.049	0.378
GSA-Public Buildings Service	0.092	0.040	-0.031	0.109	0.210
GSA-Other	-0.036	-0.008	0.155 ***	0.222 ***	0.333 ***
HHS-CDC	0.137	-0.068	-0.067	0.085	0.090
HHS-India Health Service	0.117	0.068	-0.083	0.034	0.135

	(1) Administrative Problem	(2) Managerial Problem	(3) Distributive Problem	(4) Rating Standards Problem	(5) Total Problem
HHS-National Institute of Health	0.081	-0.049	-0.043	0.098	0.087
HHS-Other	-0.004	0.094	-0.207 **	0.036	-0.080
HUD	0.107	0.156	-0.021	0.127	0.369 **
Int-Bureau of Land Management	0.237	-0.123	-0.011	0.189	0.293
Int-Indian Affairs	0.196 ***	0.146	-0.162 **	0.031	0.211
Int-National Park Service	0.244 ***	0.125	-0.241 ***	-0.009	0.119
Int-Other	0.137	0.029	-0.026	-0.011	0.129
Just-Alcohol, Tobacco, Firearms & Explosives	-0.035	-0.009	0.176 **	0.026	0.158
Just-Bureau of Prisons	0.096	0.082	0.089	0.060	0.327
Just-Drug Enforcement Administration	-0.079	0.119	0.161	-0.152	0.049
Just-Executive Office of the U.S. Attorney	-0.229	-0.238	0.260	-0.314	-0.521
Just-FBI	-0.012	0.057	-0.064	-0.034	-0.053
Just-Other	-0.077	0.164 **	-0.091	0.041	0.037
Labor	0.110	0.182 **	0.046	0.071	0.411 ***
NASA	0.141	-0.196	-0.058	-0.043	-0.156
Navy-U.S. Marine Corps	0.093	0.070	-0.049	0.127	0.242
Navy-Other	-0.052	0.118	0.030	-0.024	0.071
OPM	0.002	-0.031	-0.067	0.209 ***	0.114
SSA	0.101	0.023	-0.013	-0.149 **	-0.038
State	-0.065	0.073	0.002	0.021	0.031
DOT-FAA	0.011	0.149 **	-0.019	-0.040	0.101
DOT-Other	0.267 ***	-0.020	0.143 ***	-0.088	0.301 ***
Treas-IRS	-0.075	0.335 **	-0.218	-0.134	-0.093
Treas-Office of Comptroller of Currency	0.017	0.010	0.069	0.058	0.154
Treas-Other	0.136	0.258 ***	-0.021	0.216 **	0.589 ***
VA-Benefit	0.176 **	0.241 ***	-0.217 ***	0.061	0.261
VA-Health	0.075	-0.039	-0.121	0.199 **	0.114
VA- Other	0.063	-0.105	-0.050	0.092	0.001

	(1) Administrative Problem	(2) Managerial Problem	(3) Distributive Problem	(4) Rating Standards Problem	(5) Total Problem
N	2,084	2,084	2,084	2,084	2,084
F(65, 2018)	2.39	4.11	3.73	2.99	2.58
Prob > F	.000	.000	.000	.000	.000
R ²	0.07	0.12	0.11	0.09	0.08

Note: *p<.10; **p<.05; ***p<.01. Two-tailed. These models also examined the effects of agencies. 59 federal agencies were included in these models as dummy variables and DHS agencies were omitted as the reference group.

In model 2, performance-based rewards, objective measurements, and positions are negatively associated with managerial problems. Supervisors who perceive higher extent of performance-based rewards and objective measurements in the performance appraisal process are less likely to perceive lack of support and lack of authority, so are those in higher positions. In model 3, rating levels, performance-based rewards, working in headquarters, positions, being white, and education level are significant associated with distributive problem index. Having four and five rating levels significantly lead to more inflated rating and forced quota than two rating levels. Supervisors working in headquarters, being higher positions, being white, and being higher educated are more likely to perceive inflated ratings and forced quotas. In model 4, rating levels, headquarters, years being supervisors, age are significantly associated with rating standards problems. The results imply that two rating levels is associated with more rating standards problems. Supervisors working in headquarters locations, in supervisor positions longer, and those who were older are not as likely as others to perceive flawed standards. Finally, in model 5, years being supervisors, and age are negatively significant, meaning that

being in the supervisors' position longer and being older lower the extent of total perceived problems in the performance appraisal process. Performance-based rewards and objective measurements are negatively significant from model 2 to 5, meaning that when supervisors perceive having higher extent of performance-based rewards objective measurements in the appraisal process, less managerial, distributive, rating standards, and total problems will they perceive.

Supervisors working in the DHS agencies perceived less problems than those not in the DHS agencies, especially in administrative problems, managerial problems, and rating standards problems. In model 1, this study found that seven agencies (Food Safety and Inspection Service, U.S. Army Corps of Engineers, Defense Finance and Accounting, Indian Affairs, National Park Service, Transportation other, and Veterans Benefits Administration) have significantly higher administrative problem index scores than DHS agencies. Only one agency (Census Bureau) has a significantly lower score. In model 2, eight agencies (DOD other, Federal Deposit Insurance Corporation, Justice other, Department of Labor, Federal Aviation Administration, Internal Revenue Service, Treasury other, and Veterans Benefit Administration) have significant higher managerial scores than those who work in the DHS agencies, with no agencies being significantly lower. In model 3, the numbers agencies have significant higher and lower distributive problem scores than DHS agencies are about half and half, four agencies being higher and six agencies being lower. In model 4, six agencies (National Oceanic and Atmospheric Administration, Defense Finance and Accounting Administration, GSA other, OPM, Treasury other, and Veterans Health Administration) have significant higher scores, and only two agencies (Patent and Trademark Office and Social Security Administration) have significant lower score. Totally, nine agencies (U.S. Army Corps of Engineers, National

Oceanic and Atmospheric Administration, Defense Finance and Accounting Administration, DOD other, GSA other, Housing and Urban Development, Department of Labor, Transportation other, and Treasury other) have significant higher total index scores than the DHS agencies, and no agencies has significant lower scores. To conclude, supervisors in DHS agencies have fewer administrative, managerial, and rating standard problems, but the extent of distributive problems they perceived shows no difference than those working in non-DHS agencies.

Overall, working in DHS agencies, rating levels, performance-based rewards, objective measurements, working in headquarters locations, position, years being supervisor, age, and education level are the most influential independent variables on the extent of problems perceived by supervisors. One thing worth noticing is that working in headquarters locations, position, age and education level have negative effects in models 1, 2, 4, and 5, but have positive effects in model 3. The results imply that the distributive problems are different from the other problem items. Working in DHS agency also presents less problems in model 1, 2, 4, and 5, but not in model 3.

Analysis at Agency Level

To analyze who perceived performance appraisal problems easier at the agency level, all the dependent and independent variables are aggregated to the agency level and controlled in a series of OLS models. Dependent variables, including the administrative problem index, managerial problems index, distributive problem index, rating standards problem index, and total problem index. The results are reported in Table 11.

Except for model 7 in Table 11, all the other models have significant F value, which indicates these models are fit. The insignificant F value in model 7 means that the chosen

independent variables cannot explain the variances in the managerial problem index. Overall, in these five models, rating level, performance-based rewards, and headquarters significantly explained some of the dependent variables, while being a DHS agency and objective measurements are not significant in any of these models.

In model 6, performance-based rewards and headquarters are two significant independent variables. That means, when an agency implements higher extent of performance-based rewards, it will have fewer administrative problems, such as lack of information, lack of time, lack of training, and documentation requirement problems. Higher proportion of supervisors working in headquarters of an agency also leads to fewer administrative problems. Model 9 and 10 present similar results, except for the variable headquarters cannot significantly predict the extent of rating standards problems and total problems in an agency,

Model 8 presents a different result. Rating level is positively related to the extent of distributive problems, meaning that having more rating levels cause higher extent of distributive problems. Performance-based rewards and working in headquarters are also positively related to the extent of distributive problems. In other words, when an agency has higher extent of performance-based rewards and higher proportion of supervisors working in headquarters, it will have more distributive problems.

Table 11 Agency Level Analysis Results

	(6) Administrative Problem	(7) Managerial Problem	(8) Distributive Problem	(9) Rating Standards Problem	(10) Total Problem
Rating Level (supervisor)	0.000	0.000	0.046 **	-0.028 *	0.018
Performance Based Reward (supervisor)	-0.095 ***	-0.085 **	0.102 ***	-0.143 ***	-0.222 ***

	(6) Administrative Problem	(7) Managerial Problem	(8) Distributive Problem	(9) Rating Standards Problem	(10) Total Problem
Objective Measurement (supervisor)	0.031	0.054	-0.062	-0.010	0.012
DHS (supervisor)	-0.029	0.017	0.001	0.011	0.000
Headquarters (supervisor)	-0.211 ***	0.086	0.187 ***	-0.099	-0.037
_con	0.574 ***	0.462 ***	0.108	1.065 ***	2.208 ***
N	59	59	59	59	59
F(5, 53)	4.21 ***	1.69	4.64 ***	5.31 ***	2.92 **
R ²	0.284	0.138	0.305	0.334	0.216

Note: *p<.1; **p<.05; ***p<.01. Two-tailed Test.

Could Supervisors' Perceptions Predict Employees' Perceptions?

Table 12 and 13 presents the results of model 11 to model 17 which answer the question of whether supervisors' perceptions can predict employees' perceptions. Seven employee perceptions are discussed in this study: trust for supervisors to make a fair rating (trust in the supervisor), trust for managers to give a fair rating (trust in the manager), believing pay is accurately connected to performance (getting the right pay), satisfaction with the performance appraisal process, satisfaction with performance appraisal standards, job satisfaction, and turnover intention. The results show that supervisors' perceptions of problems in performance appraisal is able to predict these employees' perceptions, except for employees' satisfaction with the performance appraisal process. The f value of model 15 fails to be significant at .05 level, which means the fit of the model is not better than an intercept-only model. In other words, the independent variables, the four problem types and demographic variables, cannot predict

employees' satisfaction with performance appraisal process. Other than that, each type of problems perceived by supervisors has a different ability to do the predictions.

Supervisors' perception of managerial problems and rating standards problems have a better ability than the perception of administrative problems and the distributive problems to predict employees' perceptions. Supervisors' perception of managerial problems has significant negative effects on employees' trust in managers, employees' believing in getting the right pay, employees' satisfaction with performance appraisal standards, and employees' turnover intention. In other words, the employees will have lower trust in managers to give fair ratings, less believing getting the right pay, less satisfaction with performance appraisal standards, and higher turnover intention in an agency whose supervisors perceive less support and authority in the performance appraisal process. Supervisors' perception of rate standards problems has significant negative effects on employees' trust in managers, employees' satisfaction with performance appraisal standards, job satisfaction, and turnover intention.

Supervisors' perceptions of administrative problems and distributive problems, on the contrary, can only significantly predict employees' perceptions at .1 level. Supervisors' perceived administrative problems is able to predict employees' trust in supervisors and believing getting the right pay at .1 level. Supervisors' perceived distributive problems fails to predict any employees' perceptions.

Table 12 Impacts on Employee Perceptions (I)

	(11) Trust in supervisors to give fair ratings	(12) Trust in managers to give fair ratings	(13) Believing pay is accurately connected to performance
Administrative Problems	0.415 *	0.084	-1.178 *
Managerial Problems	-0.284	-0.652 ***	-1.472 **

Distributive Problems	-0.105	-0.063	-0.736
Rating Standards Problems	-0.232	-0.592 ***	-0.545
DHS	-0.043	-0.086	0.118
Headquarters (employee)	0.073	-0.122	0.268
Age (employee)	-0.003	-0.022 **	-0.019
Female (employee)	0.335 **	0.732 ***	0.347
White (employee)	0.421 **	0.551 **	0.799
Education (employee)	0.145 **	0.066	0.187
_cons	3.233 ***	3.957 ***	1.081
N	59	59	59
F(8, 50)	3.45	5.48	2.25
Prob > F	.002	.000	.030
R ²	0.42	0.53	0.32

Note: *p<.1; **p<.05; ***p<.01. Two-tailed.

Table 13 Impacts on Employee Perceptions (II)

	(14) Satisfaction with performance appraisal standards	(15) Satisfaction with performance appraisal process	(16) Job satisfaction	(17) Turnover Intention
Administrative Problems	0.608	0.648	-0.022	-0.061
Managerial Problems	-1.576 ***	-0.840 *	-0.128	0.633 **
Distributive Problems	-0.039	-0.872	-0.093	-0.121
Rating Standards Problems	-1.480 ***	-0.958 *	-0.450 **	0.692 **
DHS	-0.079	-0.029	-0.065	0.328 ***
Headquarters (employee)	-0.207	0.267	-0.475 ***	0.450 **
Age (employee)	-0.020	-0.032	-0.001	0.054 ***
Female (employee)	0.439	0.872 *	0.254	-0.407
White (employee)	0.384	0.952 *	-0.035	-0.818 **
Education (employee)	0.248 **	0.067	0.154 **	-0.151
_cons	0.917	1.149	3.700 ***	0.146
N	59	59	59	59
F(10, 48)	6.136	1.60	2.49	6.02
Prob > F	.000	.135	.017	.000
R ²	0.57	0.25	0.34	0.56

Note: *p<.1; **p<.05; ***p<.01. Two-tailed.

DISCUSSION

Are the Problems Serious?

Despite the growing number of studies investigating employee attitudes toward performance appraisal, supervisors' perception about performance appraisal is relatively unknown. In order to understand supervisors' perspectives on performance appraisal, this study presented results regarding the extent and the variance of problems that supervisors perceived in the performance appraisal process.

With an average of only 16.41% of supervisors who reported perceiving problems in their agencies, the extent of problems is lower than expected. This phenomenon could be explained by Pooyan and Eberhardt (1989) who found that supervisors have higher satisfaction with the performance appraisal process than non-supervisors (employees). Pooyan and Eberhardt (1989) proposed that supervisors are more favored in the performance appraisal process because of their ability that put them in supervisory positions; since they are more favored in performance appraisal, they perceive fewer problems in the process. The other reason suggested by Pooyan and Eberhardt (1989) was that supervisors are raters and are aware of the difficulties in the appraisal process; therefore, even if they perceive problems, they may consider the problem to be normal and not problematic. Further research should be conducted to find out which explanation is more persuasive.

Although not many supervisors in the federal agencies perceived problems in the performance appraisal process, some agencies have a higher percentage of supervisors perceiving problems. For example, the Bureau of Customs and Border Protection, DOD other, Treasury other, National Oceanic and Atmospheric Administration, EPA, and DOT other have

the highest problem index score. These agencies receive index scores greater than .2.60, while the average score is 2.33. These high-scored agencies are mostly a combination of multiple organizations. Taking DOT other for example, this group includes Federal Highway Administration, Federal Railroad Administration, National Highway Traffic Safety Administration, Federal Transit Administration, Saint Lawrence Seaway Development Corporation, Maritime Administration, Research And Special Programs Administration, Bureau Of Transportation Statistics, Federal Motor Carrier Safety Administration, and other organizations in the top management of DOT (NARA, 2004). With multiple agencies in the group, it is difficult to tell which agencies contribute more to the high problem index score. However, according to the MSPB survey manual, these groups are combined because they are not the major components of a parent agency (MSPB, 2005). In other words, these combined organizations may have smaller sizes, or their mission may be to support or manage the major components of the agency. However, without further information about these combined agencies, conclusions about why these groups of agencies have higher problem index scores are hardly drawn.

While supervisors did not perceive many problems in the performance appraisal process, employees (non-supervisors) perceived otherwise. Table 14 reports the results of employees' satisfaction with the performance appraisal system in their agencies. Thirty-eight point sixty-six percent of the employees agreed that they are satisfied with the performance appraisal system in their organizations, and 35.16% of them felt unsatisfied. Twenty-six point sixty-one percent reported that they neither agree nor disagree. The results show that more than one-third of the employees were unsatisfied with the performance appraisal system compared with the results reported by supervisors which showed that only 16.41 % of supervisors perceived problems in

the system; employees showed a higher rate of dissatisfaction. These results demonstrate the inconsistency between supervisors and non-supervisors' point of view via the performance appraisal process.

Table 14 Employees' Satisfaction with Performance Appraisal System

I am satisfied with my organizations performance appraisal system	Freq.	Percent
Strongly Agree	1,636	9.56
Agree	4,903	28.66
Neither Agree nor Disagree	4,553	26.61
Disagree	3,470	20.28
Strongly Disagree	2,545	14.88
Total	17,107	100

What Is Problematic?

This study found that inflated rating, flawed standards, and lack of support are the most problematic items in the performance appraisal process for supervisors. These three problem items are categorized as distributive problems, rating standards problems, and managerial problems respectively according to the results of factor analysis. Having three types of problems listed in the top three means that these categories of problems are regarded seriously in the performance appraisal process for supervisors. Having these three problems rated as most problematic is not surprising. These three problems are commonly seen and may be the causes or at least related to another problems. For example, flawed standards may be the reason that supervisors fail to differentiate employees' performance and further lead to inflated rating. The importance of managerial support has been emphasized by Mohrman and his colleagues (1989). They argued that managerial support is the key to the success of the performance appraisal

system, which implies that lack of support from top management may lead to low commitment to the appraisal system, causing flaws in the development of appraisal standards and other system design problems, such as lack of training and documentation problems. Supervisors who perceive lack of support may have less authority and recourses, which may lower supervisors' rater motivation and further lead to implementation problems such as inflated rating. As for inflated rating, the biased results caused by it may lead to problematic personnel decisions such as those associated with promotions, pay increases, and other actions (Guralnik, Rozmarin, & So, 2004; Jawahar & Williams, 1997). With that said, these three problem items may be more influential than they appear.

Comparing with the other three types of problems, administrative problems are less problematic for supervisors. Lack of training, as one of the administrative problems, however, is surprisingly rated as the least problematic item. Only 1% of supervisors reported that they perceived this problem in their agencies. This finding is very different from Daley (1992) and Reinke (2003) who found that training was usually ignored in local governments in North Carolina and Georgia respectively. Although both Daley and Reinke's data were collected in local governments, it is still surprising that the situation in federal and local agencies was so distinct. One possibility for this is that there are truly differences between federal and local governments, which implies that federal government allocates more resources for training, and supervisors in federal agencies are satisfied with the situation. The other possibility is that supervisors in federal agencies did not realize the problem of lack of training. The data provided information about whether the supervisors perceived they have a lack of training problem instead of asking the supervisors whether they have been trained or how often they are trained. Self-reported data may overestimate or underestimate the problem.

The Extent and Variance of the Problems across Agencies

The extent of problems varied across agencies. This indicated that some agencies had more problems than the others. Factors related to agency features should be tested to reveal how the variance existed. In this study, the effects of the Bush administrative reform in 2002 and working locations (headquarters or field) were tested.

Supervisors in the DHS agencies perceived less problems in total, especially less administrative and managerial problems, than those in the non-DHS agencies. Seven non-DHS agencies significantly has higher administrative problems scores than the DHS agencies; eight non-DHS agencies has higher managerial problems. This difference may result from the new personnel management system which DHS agencies applied after the passage of the Homeland Security Act of 2002. The new system granted these agencies substantial flexibility in personnel management, including performance appraisal (Brewer & Kellough, 2008; Kellough et al., 2010). In the system, supervisors were given the authority to determine the way that they communicate with their employees about the appraisal criteria rather than being required to develop specific written performance standards for individual employees at the beginning of an annual performance appraisal period (Kellough et al., 2010). The flexibility in the performance appraisal process allowed supervisors to have more authority and support. The result of this study indicated that the reforms in 2002 successfully reduced administrative and managerial problems in the DHS agencies. However, no significant difference are shown in the distributive and rating standard problems scores in the DHS agencies.

Supervisors working in headquarters significantly perceived more distributive problems but less rating standards problems than those working in the field ($p < .05$). The significant

impacts of working in headquarters on supervisors' perceptions of distributive and rating standards problems could be explained by the role of headquarters. The headquarters of an agency is usually responsible for developing rules and standards for subordinates (Mintzberg, 1996; Pollitt, 2006). That means, on one hand, supervisors in headquarters may experience a more structuralized rating standards development system, which leads to less rating standards problems. On the other hand, the role difference may also lead to a more structural management which leads to less flexibility in management (Lau, Newman, & Broedling, 1980; Mintzberg, 1996) and cause more distributive problems in performance appraisal process.

The Effect of Performance Appraisal Designs on Supervisors' Perceived Problems

This study examined three designs in performance appraisal: numbers of rating levels, whether using performance based rewards, and whether using objective measurements. The results show that these three designs have different effects on different supervisors' perceived problems.

Numbers of rating levels show no effects on the perception of administrative and managerial problems but have significant effects on distributive, rating standards problems, and total problems. Number of rating levels directly impacts supervisors' rating decisions; significance influence are found in distributive and rating standards problems. In general, three-rating-level has best efficiency. Three-rating-level has the highest negative coefficients comparing to other rating levels in model 5, indicating that it leads to least supervisors' perceived problems. Additionally, while four-level and five-level have negative coefficients on rating standard problems and positive coefficients on distributive problems, three-level only has

negative coefficients on rating standards problems. In other words, four and five level groups may have a side effect which increases distributive problems while they reduce perceived rating standards problems; three level group will only reduce perceived rating standards problems and has no side effects. This finding echoes Bendig's finding that three rating levels is most efficient (Bendig, 1954).

To explain the result, the causes of distributive problems and rating standards problems must be considered. One of the reasons of distributive problems is supervisors' inability or unwillingness to differentiate employees' performance. The increasing of rating categories may increase the difficulties for supervisors to categorize performance and lead to distributive problems. Rating levels three to six significantly have fewer rating standards problems than two rating levels. This indicates that supervisors prefer having more categories to discrete options, satisfied or not. As the negative coefficients drop with rating level six, having too many levels may increase difficulties for supervisors to make judgments.

Applying performance based rewards and objective measurements increase supervisors' perceptions of administrative problems but reduce the perceptions of other problems. The results imply that performance based rewards and objective measurements increase administrative costs which may include time length collecting performance information and developing appraising measurements. These activities require extra efforts and skills for supervisors which can be problematic. With the costs in administration, performance based rewards and objective measurements reduce managerial, distributive, and rating standards problems. The implication is that a successful appraisal system with performance based rewards and objective measurements have to be equipped with sufficient support and resources, well-developed rating standards, and reasonable rating distribution to make sure that the system is fairly and accurately implemented.

Performance based rewards and objective measurements are mechanisms that stimulate the reduction of problems.

The results also reveal that there is no flawless design. A beneficial design usually comes with drawbacks. For example, rating-level four and five have the least rating standards problems, but they also have significant more distributive problems. Applying performance based rewards and objective measurements lead to more administrative problems but fewer other problems. These findings imply that determining applying which design is a trade-off. Managers or supervisors must know clear about which goals or values are more critical for the organization and make the decision based on the needs.

The Effect of Demographic Features on Supervisors' Perceived Problems

The results in Table 10 showed that supervisors' demographic features have various impacts on their perceptions of problems in the performance appraisal process. Previous studies pointed out that disadvantage group, such as female, non-white, younger employees, and employees in lower positions, usually receive lower performance appraisal rating, because they were found to be less favored in performance appraisal rating (Alonso & Lewis, 2001; Baxter, 2012; Johnson & Ronan, 1979; Lewis, 1997; Liden, Stiiweli, & Ferris, 1996; Natbandian, 1981; Ng & Feldman, 2008). This study found that supervisors in these disadvantaged groups significantly perceived more problems than those in the advantage groups. For example, supervisors in higher positions significantly perceived fewer managerial problems in the performance appraisal process ($p < .001$). Supervisors in higher positions possess greater authority and resources, which may explain why they perceived fewer managerial problems in the performance appraisal process. However, they perceive more distributive problems ($p < .05$).

Senior supervisors (longer in supervisor positions) perceive fewer rating standards problems than junior ones. Being longer in the supervisory position allows these supervisors to be more familiar with or used to the development of rating standards, which make them more satisfied with the process and perceive less problems.

Older supervisors perceived less problems than younger ones in general ($p < .05$), especially less administrative problems ($p < .001$) and less rating standards problems ($p < .05$). Two reasons may explain the finding. First, previous studies found that older employees are better performers due to their experience at work (Liden et al., 1996; Ng & Feldman, 2008). Their better performance leads them to be more satisfied with the appraisal system and to perceive fewer problems. The other explanation is that older supervisors have been used to the current performance appraisal system; the familiarity lets them more easily accept the system rather than to perceive problems.

Education level is found to be negatively related to the extent of administrative problems, but positively related to that of distributive problems perceived by supervisors in the performance appraisal process. Higher educated employees were believed to have more advantages than lower educated ones in the performance appraisal process (Alonso & Lewis, 2001). This advantage may explain their perceptions of fewer administrative problems. Higher educated supervisors may have higher ability to deal with the lack of time, lack of information, and lack of training problems in performance appraisal process.

As mentioned previously, working in headquarters, being in higher positions, being white, and higher educated are negatively associated with the extent of problems perceived, except for distributive problems. This finding implies distributive problems are different from other problems types. More studies should be done to explain the result. One possible

explanation is that distributive problems, inflated rating and forced quota, cannot be solved by being trained or gaining experiences like one can do for administrative problems and rating standards problems. If people are not informed that inflated rating and forced quota can be problematic in performance appraisal, they may not be aware the problems caused by inflated rating and forced quota. This study finds that supervisors working in headquarters, being in higher positions, being white, and being higher educated may be better informed about the drawbacks of inflated rating and forced quota, and that is why they perceive more distributive problems.

The Impacts on Non-Supervisors' Perceptions

Whether supervisors' perceptions of problems in the performance appraisal process can predict employees' perceptions is examined in this study. Previous studies pointed out that problems in the performance appraisal process cause negative employee perceptions such as low job satisfaction and low satisfaction with supervisors and the performance appraisal system (Colquitt, 2001; Cropanzano et al., 2002; Foley et al., 2005; Jawahar, 2007; Jepsen & Rodwell, 2009; McFarlin & Sweeney, 1992). In this study, employees' perceptions of problems in the performance appraisal process was not directly measured; instead, this study tried to predict employees' perception of work through supervisors' perceptions of problems in the performance appraisal process. The hypothesis is that when supervisors perceive problems in the performance appraisal process, it means that unfair and incorrect results affect the employees. These results may cause negative perceptions for employees toward their work and supervisors. In other words, when discussing how supervisors' perceptions of problems in the performance appraisal

process predict employees' perception of work, one should notice that it is the consequences of the extent of supervisors' perceived problems that impact the employees.

The results showed that supervisors' perception of problems in the performance appraisal process can predict some of the non-supervisors' perceptions, including employees' trust in supervisors, employees' trust in managers, believing getting the right pay, employees' satisfaction with performance appraisal standards, and employees' job satisfaction, and turnover intention. Each problem item has various extent of influence on each employee perception. However, supervisors' perception of problems cannot predict employees' satisfaction with the performance appraisal process.

Employees' Trust in Supervisors and Managers to Give Fair Ratings

This study found that the managerial problem index can significantly predict both employees' trust in supervisors and managers to give fair ratings. Managerial problems refer to lack of support and lack of authority for supervisors in the process of performance appraisal. That is, when an agency has more supervisors who perceived lack of authority and lack of support, the employees in this agency tend to have less trust in their supervisors and managers to give fair ratings. On the contrary, when an agency has less supervisors' perceived lack of authority and lack of support, employees in this agency tend to have more trust in their supervisors and managers to give fair ratings. Supervisors' perception of rating standards problems can also predict employees' trust in managers to give fair ratings. When supervisors perceived more rating standards problems, employees' trust in managers declined. However, the effect of rating standards problems is not significant on the trust in supervisors.

What is interesting is that when an agency has more lack of support and lack of authority problems, employees have less trust in their upper managers to give fair ratings than their direct supervisors. The reason could be that the employees regard the upper managers the actual decision maker and believe that they should be responsible for problems perceived in the performance appraisal process. This finding echoes Daley's (1992, p. 51) argument that performance appraisal set up the "rules of the game" in an organization. Who setting up the rules will be expected to be responsible for the consequences. The finding also reveals the importance of the communication lines between the leadership and the employees. The communication strengthens the connection between them, which make employees tend to believe that the results of performance appraisal are accurate (Fulk et al., 1985). Since direct supervisors may have more connections with their employees, employees' trust in supervisors may be higher than that in upper managers.

Believing Pay is Accurately Connected to Performance

This study found that administrative problems and managerial problems are associated with employees' perception of getting the right pay. Both of these problems indices have negative coefficients, but managerial problems are significant at .05 level while the administrative problems are significant at .1 level. In other words, in an agency where the supervisors perceived higher extent of lack of information, lack of time, lack of training, documentation requirements, lack of support, and lack of authority problems, the employees in the agency have less trust about they pay is accurately connected to their actual performance.

Administrative problems measure the direct and indirect costs, including efforts, time, paper works, and training, in the performance appraisal process. These costs distract from other

supervisory duties and increase burdens doing performance appraisal (Feldman, 1981; Heneman & Wexley, 1983). Supervisors may have difficulties to recall details of subordinate activity when appraising due to these costs (Feldman, 1981; Heneman & Wexley, 1983), which may further lead to inaccurate and unfair performance appraisal results. Managerial problems refer to supervisors' lack of support and authority, which means that supervisors have limited authority or resources to adjust employees' pay according to their performance appraisal results. When the administrative and managerial problems are found in an agency, it is reasonable that the employees do not believe they get the right pay.

What worthy noticing is that only administrative and managerial problems are significantly associated with employees' perception of getting the right pay. A possible explanation is that whether the employees' pay is accurately connected to performance is an administrative and a managerial issue. When administrative and managerial problems are perceived in the performance appraisal process, employees tend to believe problems can also be observed in the process that connect their pay to their performance.

Employees' Satisfaction with Performance Appraisal Standards

This study found that managerial and rating standards problems indices significantly predict employees' satisfaction with performance appraisal standards. However, both of these problem indices are negatively associated with the dependent variable. These results indicates that when supervisors perceive more managerial and rating standards problems, employees will be less satisfied with performance appraisal standards.

This finding support the statement that when supervisors perceived problematic performance appraisal standards, their employees will perceive the same. Flawed performance

appraisal standards may be caused by supervisors' cognitive limitation (Bowman, 1999), the difficulties of selecting appropriate standards for public organizations (Kellough, 2012), and the use of inadequate descriptions or insufficient schema for performance standards that lead to misunderstanding (Daley, 1992, pp. 82, 106). The difficulties of selecting appropriate standards for public organizations may lead to flawed standards or criteria that are not directly relevant to employees' performance being used in the performance appraisal process (Kellough, 2012). For example, Chen (2009) found that age is a common substitution when appropriate standards are not available. Younger employees are assumed to be less experienced and need senior employees' assistance so they receive lower performance ratings. The use of inadequate descriptions or insufficient schema causes misunderstandings between supervisors and employees. For example, the term "average" may not be understood as the "mean," but as "second rate," "minimally acceptable," or "being barely passing" instead (Daley, 1992, pp. 82, 106). When these situations occur, employees' satisfaction with performance appraisal standards declines.

The managerial problem index was found to be negatively associated with employees' satisfaction with performance appraisal standards. That means that when supervisors perceive less lack of authority and lack of support, employees will be more satisfied with performance appraisal standards. The problem of these managerial problems is that supervisors' performance rating decisions are constrained by managerial rules or culture. The unsupportive environment may lead supervisors to neglect the importance of performance appraisal and only treat it as a routine process (Mohrman et al., 1989). The careless behavior of supervisors may cause flawed standards to be used in the rating process.

Employees' Job Satisfaction

This study found that the rating standards problem index can significantly predict employees' job satisfaction. The result indicates that when more supervisors in an agency perceive flawed standards in performance appraisal process, the employees in the agency tend to have lower job satisfaction. As discussed earlier, the rating standards problems cause unfairness in the performance appraisal process and the unfairness causes employees to be unsatisfied with the performance appraisal standards. The unfairness may further result in employees' low job satisfaction (Greenberg, 1986; Greenberg & Colquitt, 2014).

The result can be further explained by the expectancy theory (Vroom, 1964) and the equity theory (Adams, 1965). The equity theory points out that when employees feel unfairness in their appraisal results, their job satisfaction drops (Colquitt, 2001; Gabris & Ihrke, 2001; Jawahar, 2007; Jepsen & Rodwell, 2009). The unfairness includes the outcomes of performance appraisal results, such as rewards, payment and benefit (Colquitt, 2001); the process of performance appraisal, including consistency, the lack of bias, accuracy, and ethicality (Leventhal, 1980); and the interpersonal treatments during the rating process (Bies & Moag, 1986). Rating standards problem is a common source of this unfairness. Good performers are not rewarded for their good performance, and performance appraisal fails to motivate employees to perform better (Zammuto, London, & Rowland, 1982).

When performance appraisal has no function in motivation, supervisors may see performance rating as routine work and have low motivation to give careful ratings, which causes inaccuracy and unfairness that lowers employees' job satisfaction. Additionally, other criteria or standards may be applied when objective performance standards cannot determine employees' ratings. For example, senior employees may be rated higher because they are

assumed to be more experienced. Supervisors may also ask employees to take turns receiving higher rates. Either way makes employees not expect to receive higher rating and rewards when they put forth extra effort (Rainey, 2009; Vroom, 1964). As the expectancy theory suggests, when employees' expectancy fails, their job satisfaction drops (Mount, 1983; Pooyan & Eberhardt, 1989).

Employees' Turnover Intention

This study found that managerial and the rating standards problem indices can significantly predict employees' turnover intention. The results show that an agency where the supervisors perceive more lack of support, lack of authority, and flawed standards, the employees have higher turnover intention.

Employees' higher turnover intention can be explained by their perception of problems in the performance appraisal process (Brewer & Kellough, 2008; Roberts, 1994a). Rating standards problems prevent employees from receiving adequate rating results and feedbacks from the performance appraisal process (Daley, 1992; Poon, 2004). The flawed standards also lead to inaccurate and unfair appraisal results that may increase employees' turnover intention. Managerial problems include lack of support and lack of authority, which mean that supervisors do not have sufficient authority or resources to give employees the appraisal results and rewards they deserve. Since fair and accurate performance appraisal and merit-based rewards are critical for reducing employees' turnover rates (Cho & Lewis, 2012; Poon, 2004), employee have higher turnover intention when they see the performance results are biased by managerial failures.

The Most Influential Problems

Distributive problems, managerial problems, and rating standard problems are three most problematic items in terms of their means (Table 4). In other words, supervisors considered inflated rating, forced quota, lack of support, lack of authority, and flawed standards are the most serious problems they perceived in the performance appraisal process. As the total problem score is the summation of the four problems, these problems contribute more to total problems.

However, if considering the influence on employees' perceptions, managerial problems and rating standards problems stand out. Managerial problems significantly impact employees' trust in supervisors and managers to give fair rating, beliefs getting the right pay, satisfaction with performance appraisal standards, and turnover intention. Rating standards problems significantly influence employees' trust in managers to give fair rating, satisfaction with performance appraisal standards, job satisfaction, and turnover intention. Administrative problems, on the other hand, only significantly affect employees' trust in supervisors to give fair rating and beliefs getting the right pay; distributive problems does not significantly influence any employees' perceptions. This finding suggests that employees are more sensitive to the effects of managerial problems and rating standards problems, or these two problems cause more unfairness or inaccuracy in the results of performance appraisal which leads to employees' significant distrust in leadership and dissatisfaction with jobs and rating standards.

These results pointed out the importance of managerial issues in the performance appraisal process. Studies of performance appraisal heavily emphasized the technical problems, such as the design of appraisal system and how to reduce rater bias; however, these problems were not as influential as managerial problems to supervisors. Managerial problems mainly referred to the support from upper management, which allowed supervisors to have enough

authority and flexibility to rate employees based on their judgments and to reward good performers. In other words, this study found that supervisors believed that lack of authority and support were the main reasons that employees did not get the performance appraisal results they deserved. Employees also showed that they were more sensitive to the results of managerial problems.

The importance of the support from upper management can also be supported by the results that non-DHS agencies are found to have more problems than the DHS agencies. DHS agencies significantly perceived less problems than non-DHS agencies because they applied a new personnel management system which allowed supervisors to have more flexibility in the performance appraisal process. The flexibility allows supervisors in the DHS agencies to perceive fewer administrative, managerial and total problems.

Analysis at Agency Level

Table 8 showed that some federal agencies had higher or lower problem index scores than others, indicating the extent of problems in performance appraisal process varies across agencies. Table 11 tried to explain what factors influence the variances across agencies; the results indicate that agencies with higher extent of performance-based rewards and higher proportions of supervisors working in the headquarters have fewer problems in the performance appraisal process. Numbers of rating levels are found positively related to the extent of distributive problems.

These results are not consistent with the results at the individual level analyzed in level one. In level one, the individual model shows that performance-based rewards and objective measurements are positively related to administrative problems; however, at the agency level,

performance-based rewards is found negatively associated with administrative problems, and objective measurements is not significant. This finding suggests that for raters, performance-based rewards and objective measurements enhance their efforts when doing the rating; however, for the whole agency, the increasing costs for the individual raters do not significantly increase for the organization. On agency's perspective, performance-based rewards even reduces increase administrative burdens.

The other inconsistent results with the individual level is the significance on the headquarters. At the individual level, supervisors working in the headquarters shows no significant influence on the administrative problems; nevertheless, headquarters is significantly associated with the administrative problems in the agency level model. In other words, at the agency level, when an agency has more supervisors working in the headquarters, it has fewer administrative problems; at the individual level, supervisors working in the headquarters do not significantly perceive higher extent of administrative problems. As headquarters usually are usually regulated and less flexible in management (Lau et al., 1980; Mintzberg, 1996), more people working in the headquarters means more people perceive the less flexible environment and enhance the administrative problem scores.

Another inconsistency between the individual level and the agency level is that at the agency level, performance-based rewards is found positively associated with the distributive problem index, while that at the individual level is negatively associated with the distributive problem index. One possible explanation for the inconsistency is that at the individual level, supervisors' perception may have some personal bias. That is, some of the supervisors may not see inflated rating and forced quota as problematic. However, inflated rating and forced quota become problematic when aggregating to the agency level, which supports the earlier finding

that distributive problems are difficult to be perceived in the individual level. They may not be able to observe the problem because they have not been informed or learned that rating everyone as equal and putting a forced quota at each level can be problematic. In such cases, they cannot perceive the problems' existence. However, this personal bias will be diminished at the agency level. Previous studies pointed out that inflated rating usually happens when the results of performance appraisal are connected with employees pay, rewards, or promotions, supervisors may wish to avoid harsh rating to not to irritate the employees and not to deal with the unhappy employees (Jawahar & Williams, 1997; London, Mone, & Scott, 2004; K. R. Murphy & Cleveland, 1991). The findings at the agency level support this argument.

CHAPTER 5

CONCLUSION

Supervisors are the raters in the performance appraisal process. They participate in the design of appraisal measurements, determine the rating standards, make judgments on employees' performance, and provide feedback to the employees and the organization.

Supervisors know details about how performance appraisal operates and experience every step in the performance appraisal process when employees' opinions about performance appraisal are mainly based on the results they receive and the treatments they perceive in the appraising process. Previous studies are mostly results-oriented, focusing more on employees' perceptions about the effectiveness of performance appraisal. One problem of these results-oriented studies is that they neglected the process and cannot diagnose the causes of its ineffectiveness. Analyzing the performance appraisal process from supervisors' perspectives allows researchers to know more about the shortages in the appraisal process from raters' point of views. This information is crucial to improving the performance appraisal process in the future.

This study examined the extent, the variance, and the impact of supervisors' perceived problems in the performance appraisal process. Five research questions were answered in this study, including: (1) To what extent do supervisors perceive the performance process as problematic? (2) What aspects of performance appraisal do supervisors in federal agencies see as most problematic? (3) What factors can explain variation in supervisors' perceptions of the problematic nature of performance appraisal? (4) Are there differences in the aspects of performance appraisal seen as most problematic across agencies? (5) Do agencies where

supervisors see performance appraisal as more problematic have employees who have more negative views on performance appraisal? This study utilized data from MSPB 2005 to answer these questions.

This study found that inflated rating, flawed standards, and lack of support are most problematic for supervisors in the federal agencies. The problem of inflated rating suggests supervisors may have difficulties or low motivation when differentiating employees' performance. The problem of flawed standards once again illustrates the difficulties of developing appropriate rating standards in public organizations. The problem of lack of support points out the importance of top management's support in the process of performance appraisal.

The extent of problems perceived by supervisors varied across federal agencies. At the agency level, agencies with performance-based rewards and higher proportion of supervisors working in the headquarters have fewer problems in the performance appraisal process in general. However, agencies having more rating levels and using performance-based rewards are found having more distributive problems. Additionally, supervisors working in the DHS agencies present lower administrative, managerial, and total scores in the individual level.

Some supervisors are more easily to perceive problems than others in the performance appraisal process based on the performance appraisal design they perceive and their demographic features. Numbers of rating levels are negatively associated with the extent of rating standards and total problems, but positively associated with distributive problems. Performance-based rewards and objective measurements are both negatively associated with the managerial, distributive, rating standards, and total problems indices, but positively related to the administrative problems. Working in the headquarters, being in higher positions, years being

supervisors, being older, and education levels are all found to be influential on some of the problem indices.

Supervisors' perceptions of problems in the performance appraisal process can predict employees' perceptions. Managerial problem index can significantly predict employees' trust in the leadership to give a fair rating, employees' beliefs getting the right pay, employees' satisfaction with performance appraisal standards, and employees' turnover intention. A higher managerial problem index score indicates lower employee trust in the leadership, lower beliefs getting the right pay, lower satisfaction with performance appraisal standards, and higher turnover intention. The rating standards problem index can significantly predict employees' trust in managers to give fair ratings, satisfaction with performance appraisal standards, job satisfaction, and turnover intention. A higher rating standards problem index score indicates lower trust in managers to give fair ratings, lower satisfaction with performance appraisal standards, lower job satisfaction, and higher turnover intention. Administrative problem index and distributive problem index only have weak significance or non-significance in predicting these employees' perceptions. This result implies the importance of managerial supports and rating standards design for employees' perceptions.

These findings suggest several implications. The first implication is that managerial problems in the performance appraisal process deserve more attention. Studies about performance appraisal usually focused on the improvements of technical problems, such as appraisal methods, communication between raters and ratees, and reducing rater errors. These technical problems are no doubt critical, but this study suggests managerial problems are equal or even more influential for both supervisors and employees. Managerial problems index contributed greatly to the total problem index scores and are more influential to employees' trust

in the leadership to give a fair rating, employees' beliefs getting the right pay, employees' satisfaction with performance appraisal standards, and employees' turnover intention.

Managerial problems refer to supervisors' lack of support and authority. These problems limit supervisors' decision when giving performance ratings and limit their application of the appraisal results. In the end, the performance appraisal cannot reflect the true performance of employees and fails to reward good performers and to improve overall performance. Support from the management creates an environment that makes everyone believe that performance appraisal and the results are important and influential. The support provides supervisors with flexibility and authority which allows performance appraisal to be closer to the goals of purposefulness, fairness, and accuracy. To improve the performance appraisal process, removing the barriers from the top management is an elementary step.

The second implication is the importance of flexibility for supervisors in the performance appraisal process. Two findings support the argument. The first evidence is that supervisors in the DHS agencies had lower problem index scores. The DHS agencies applied the new personnel management system, which provided more flexibility for supervisors in the performance appraisal process. The finding suggests that when supervisors have more flexibility, they will perceive fewer problems in the rating process. Second, the managerial problem index is found to be more influential employees than the other problem indices. Having fewer managerial problems indicates supervisors perceive more support, authority, and fewer constraints in the performance appraisal process. The flexibility increases the possibility for supervisors to rate employees based on their true performance instead of being constrained by managerial rules or culture. When supervisors perceived fewer constraints in their rating process, employees' trust in the leadership to give fair ratings, beliefs getting the right pay, satisfaction with performance

appraisal standards, and turnover intention improved significantly. These results indicate the importance of flexibility for supervisors in the performance appraisal process.

The third implication is that distributive problems is not easily perceived at the individual level and the extent of the problem may be underestimated. This conclusion is drawn because supervisors who perceive more distributive problem are those who are more informative, such as those working in headquarters, being in higher positions, being white, and being higher educated. These features of supervisors allows them to be better informed about the problems of inflated rating and forced quota in the performance appraisal. In other words, if a supervisor has never been informed about the problems of inflated rating and forced quota, it is possible that the supervisor will not perceive the problems, even when the problems are common in the organization.

The individual supervisors' difficulty in perceiving distributive problems may further result in the inconsistency: at the agency level, performance-based rewards is found positively associated with the distributive problem index, while that at the individual level is negatively associated with the distributive problem index. As the individual supervisors may not perceive the distributive problems, it is possible that the results at the individual level mitigate the influence of performance-based rewards on the extent of distributive problems. The difficulty for individual supervisors to perceive distributive problems is diminished at the agency level so that the effects of performance-based rewards on the extent of distributive problems to an agency can be revealed.

These implications lead to three suggestions for practice. First, in order to improve the performance appraisal process, removing constraints for supervisors and emphasizing raters' training is crucial. Supervisors need flexibility and authority to determine and develop the best

way to appraisal employees, including choosing appraisal methods, developing rating criteria and standards, determining the frequency and the way to provide feedback for employees, choosing reward methods, and determining how to apply the appraising results. The flexibility and authority provide supervisors the room to determine the best fit model for the team they lead.

However, supervisors need to be trained to be responsible for the increasing authority they get, which is the second practical suggestion. Removing constraints in the performance appraisal process for supervisors means that supervisors' discretion on performance appraisal increases. More discretion means more responsibility, and that requires supervisors to be better trained to facilitate the process. Supervisors need to be trained to know how to communicate with their employees to set up goals, rating criteria, and standards. Supervisors need to learn how to express themselves and how to make sure that employees understand the meaning of the rating criteria and standards, and how to avoid descriptions that are easily misunderstood.

Supervisors also need to learn how inflated rating and forced quota affects employees and the organization. This study found that supervisors may have problems when it comes to being aware of inflated ratings and forced quota. They may have false impressions that rating everyone as average equates to fairness and do not know the harm of inflated rating and forced quota to employees and to organizations. In such cases, the extent of distributive problems is underestimated, and so is the influence of the problems on employees and on agencies. Supervisors need to be trained to know employees' reactions to the distributive problems and how these reactions may impact the agency. The supervisor plays a key role in the performance appraisal process; the knowledge and skills required for this role are beyond current practice.

The third suggestion for practice is to limit the number of rating levels. This study found that the increasing number of rating level raise the difficulty for supervisors in differentiating

employees' performance and cause more inflated rating and forced quota problems. However, supervisors perceive more difficulty in developing appropriate appraisal standards when they only have to two rating levels. To conclude, having three categories in rating levels may be the most efficient design.

More studies need to be done to answer further questions. First, this study suggests that flexibility is crucial for supervisors in the performance appraisal process. However, the degree of flexibility that is sufficient and what flexibility boundaries are required further study. Additionally, the performance appraisal process includes goal setting, criteria, and standards determination, raters-ratees communication, rating, and application of rating results. Which stage(s) of this process requires the most flexibility, and which stage(s) needs rules prior to flexibility also needs to be examined. In other words, the definition of flexibility in the performance appraisal process needs further clarification. Second, this study finds the distributive problems are different from other problem types and assumes the difference is resulted from the feature that people perceive these problem only when they have known that distributive problems are problematic, and some people perceive these problems more because they are better informed about the problems. However, these assumptions needs more direct evidences to support. Third, this study points out the importance of raters' training, but how to make the training effective and efficient needs further study. What are the essential topics for training, what are the appropriate methods and approaches, how to improve rater and ratees' satisfaction with the performance rating process, and how should agencies let supervisors believe training is necessary are important questions to answer.

This study has several limitations. First, the problems examined in this study were limited to the nine items listed in the MSPB 2005. Some expressions of the items were vague and may

mislead the respondents. For example, only flawed standards was listed, not flawed criteria. Some respondents may not be able to tell the difference between criteria and standards so that they may confuse criteria with standards when answering the question. Lack of authority was also a vague description. The question did not explain what authority it referred to. Respondents may think of the authority of deciding rating criteria and standards, applying rating results, or all of the above. These are unclear expressions that may cause biases in the analysis. Second, more variables that directly describe agency features should be examined in future studies such as organizational goal ambiguity, organizational justice, organizational size, and organizational age. Third, the database in use was 12 years old, but it is the latest survey data that allows researchers to answer the research questions of this study. The results of this study describe the situation in 2005 and may not be able to be generalized to current situation.

Despite these limitations, this study has several contributions. First, this study adds supervisors' perspectives to the study of effective performance appraisal. This study analyzes the extent of problems perceived by supervisors in the performance appraisal process, the items that are problematic for supervisors, the factors that influence supervisors' perceptions, and the influence of these perceived problems on employees' perceptions. This is a comprehensive study regarding supervisors' perceived problems in the performance appraisal process. Second, this study discovered the importance of managerial problems for supervisors in the performance appraisal process. Although some previous studies pointed out the importance of management support, most of them discussed how to improve technical issues in the performance appraisal process, such as reducing rater errors, and communicating with employees. The study asserts that solving managerial problems may come prior to solving technical ones. Third, this study provides three practical suggestions: increasing flexibility and authority for supervisors in the

performance appraisal process, emphasizing raters' training, and limiting the numbers of rating levels. This study finds the importance of removing constraints for supervisors in the performance appraisal process. They need sufficient authority to make appraisal decisions based on their judgments of employees' performance. However, increasing flexibility for supervisors means that supervisors have more responsibility in terms of the effectiveness of appraisal results. The provision of flexibility for supervisors must go along with sufficient training to insure the effectiveness of performance appraisal.

References

- Adams, J. S. (1965). Inequality in Social Exchange. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology*. Orlando, FL: Academic Press.
- Alonso, P., & Lewis, G. B. (2001). Public Service Motivation and Job Performance: Evidence from the Federal Sector. *The American Review of Public Administration*, 31(4), 363-380. doi:10.1177/02750740122064992
- Ammons, D. N., & Condrey, S. E. (1991). Performance Appraisal in Local Government: Warranty Conditions. *Public Productivity & Management Review*, 14(3), 253-266.
- Aplin, J. J. C., & Schoderbek, P. P. (1976). MBO: Requisites for Success in the Public Sector. *Human Resource Management*, 15(2), 30-36.
- Ayers, R. S. (2015). Aligning Individual and Organizational Performance: Goal Alignment in Federal Government Agency Performance Appraisal Programs. *Public Personnel Management*, 44(2), 169-191 123p. doi:10.1177/0091026015575178
- Balzer, W. K., & Sulsky, L. M. (1992). Halo and Performance Appraisal Research: A Critical Examination. *Journal of Applied Psychology*, 77(6), 975-985.
- Battaglio, R. P. (2015). *Public Human Resource Management: Strategies and Practices in the 21st Century*. SAGE Publications.
- Baxter, G. W. (2012). Reconsidering the Black-White Disparity in Federal Performance Ratings. *Public Personnel Management*, 41(2), 199-218.
- Becker, T. E., & Klimoski, R. J. (1989). A Field Study of the Relationship between the Organizational Feedback Environment and Performance. *Personnel Psychology*, 42(2), 343-358. doi:10.1111/j.1744-6570.1989.tb00662.x
- Bendig, A. W. (1954). Reliability and the Number of Rating-scale Categories. *Journal of Applied*

Psychology, 38(1), 38-40. doi:10.1037/h0055647

- Bernardin, H. J., & Beatty, R. W. (1984). *Performance appraisal: assessing human behavior at work*. Kent Pub. Co.
- Bies, R. J., & Moag, J. F. (1986). Interactional Justice: Communication Criteria of Fairness. In R. J. Lewicki, B. H. Sheppard, & M. H. Bazerman (Eds.), *Research on Negotiation in Organizations: A Research Annual* (Vol. 1, pp. 43-55). Greenwich, CT: JAI Press.
- Bowman, J. S. (1999). Performance Appraisal: Verisimilitude Trumps Veracity. *Public Personnel Management*, 28(4), 557.
- Brewer, G. A., & Kellough, J. E. (2008). *The Impact of Federal Employee Perceptions of Justice and Fairness on Job Satisfaction, Organizational Performance, and Turnover Intentions*. Paper presented at the annual meeting of the APSA 2008 Annual Meeting, Hynes Convention Center, Boston, Massachusetts.
- Brook, D. A., & Cynthia, L. K. (2007). Civil Service Reform as National Security: The Homeland Security Act of 2002, 399.
- Buchanan, B. (1974). Building Organizational Commitment: The Socialization of Managers in Work Organizations. *Administrative Science Quarterly*, 19(4), 533-546.
- Burgess, S., & Ratto, M. (2003). The Role of Incentives in the Public Sector: Issues and Evidence, 285.
- Carroll, S. J., & Schneier, C. E. (1982). *Performance Appraisal and Review Systems*. Clenview, IL: Scott, Foresman and Company.
- Chen, D.-Y. (2009). *Review of the Performance Appraisal System in Taiwan: Perspectives of Evidence-based, Justice, and Participative Management*. Taipei: Taiwan: The Examination Yuan of ROC.

- Cho, Y. J., & Lewis, G. B. (2012). Turnover Intention and Turnover Behavior: Implications for Retaining Federal Employees. *Review of Public Personnel Administration*, 32(1), 4-23. doi:10.1177/0734371X11408701
- Chun, Y. H., & Rainey, H. G. (2005). Goal Ambiguity and Organizational Performance in U.S. Federal Agencies. *Journal of Public Administration Research and Theory*, 15(4), 529-557. doi:10.1093/jopart/mui030
- Colquitt, J. A. (2001). On the Dimensionality of Organizational Justice: A Construct Validation of a Measure. *Journal of Applied Psychology*, 86(3), 386-400.
- Cook, J., & Crossman, A. (2004). Satisfaction with performance appraisal systems: A study of role perceptions. *Journal of Managerial Psychology*, 19(5), 526-541. doi:10.1108/02683940410543605
- Cravens, K. S., Goad Oliver, E., Shigehiro, O., & Stewart, J. S. (2015). Workplace Culture Mediates Performance Appraisal Effectiveness and Employee Outcomes: A Study in a Retail Setting. *Journal of Management Accounting Research*, 27(2), 1-34. doi:10.2308/jmar-51169
- Cropanzano, R., Prehar, C. A., & Chen, P. Y. (2002). Using Social Exchange Theory to Distinguish Procedural from Interactional Justice. *Group & Organization Management*, 27(3), 324-351. doi:10.1177/1059601102027003002
- Daley, D. M. (1986). Humanistic Management and Organizational Success: The Effect of Job and Work Environment Characteristics on Organizational Effectiveness, Public Responsiveness, and Job Satisfaction. *Public Personnel Management*, 15(2), 131.
- Daley, D. M. (1988). Performance Appraisal and Organizational Success: Public Employee Perceptions in an MBO-Based Appraisal System. *Review of Public Personnel*

- Administration*, 17.
- Daley, D. M. (1990). *performance Appraisal in North Carolina: A Profile of Municipal Personnel Practices*. Paper presented at the Paper presented at th Annual Meeting of the American Political Science Association.
- Daley, D. M. (1992). *Performance Appraisal in the Public Sector: Techniques and Applications*: Quorum Books.
- Daley, D. M. (2009). The Trails and Tribulations of Performance Appraisal: Problems and Prospects in the Twenty-First Century. In S. W. Hays, R. C. Kearney, & J. D. Coggburn (Eds.), *Public Human Resource Management*: Pearson Education.
- Deming, W. E. (1981). Improvement of quality and productivity through action by management. *National Productivity Review*, 1(1), 12-22. doi:10.1002/npr.4040010105
- Deming, W. E. (1986). *Out of the Crisis*: Cambridge University Press.
- Dirks, K. T. (2000). Trust in Leadership and Team Performance: Evidence From NCAA Basketball. *Journal of Applied Psychology*, 85(6), 1004-1012. doi:10.1037//0021-9010.85.6.1004
- Dirks, K. T., & Ferrin, D. L. (2002). Trust in Leadership: Meta-Analytic Findings and Implications for Research and Practice. *Journal of Applied Psychology*, 87(4), 611-628.
- Durham, C. C., & Bartol, K. M. (2009). Pay for Performace. In E. A. Locke (Ed.), *Handbook of Principles of Organizational Behavior*. UK: John Wiley & Sons, Ltd
- Dusterhoff, C., Cunningham, J., & MacGregor, J. (2014). *The Effects of Performance Rating, Leader-Member Exchange, Perceived Utility, and Organizational Justice on Performance Appraisal Satisfaction: Applying a Moral Judgment Perspective* (01674544). Retrieved from <http://proxy->

remote.galib.uga.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=93751670&site=eds-live

Elicker, J. D., Levy, P. E., & Hall, R. J. (2006). The Role of Leader-Member Exchange in the Performance Appraisal Process. *Journal of Management*, 32(4), 531-551.

doi:10.1177/0149206306286622

Farndale, E., & Kelliher, C. (2013). Implementing Performance Appraisal: Exploring the Employee Experience. *Human Resource Management*, 52(6), 879-897.

doi:10.1002/hrm.21575

Feldman, J. M. (1981). Beyond Attribution Theory: Cognitive Processes in Performance Appraisal. *Journal of Applied Psychology*, 66(2), 127-148.

Fisher, C. M. (1995). The Differences between Appraisal Schemes: Variation and Acceptability: Part II: Rhetoric and the Design of Schemes. *Personnel Review*, 24(1), 51-66.

doi:10.1108/00483489510079084

Foley, S., Hang-Yue, N., & Wong, A. (2005). Perceptions of Discrimination and Justice: Are there Gender Differences in Outcomes? *Group & Organization Management*, 30(4), 421-450. doi:10.1177/1059601104265054

Franco, M., & Bourne, M. (2003). Factors that play a role in “managing through measures”.

Management Decision, 41(8), 698-710. doi:doi:10.1108/00251740310496215

Fried, Y., Tiegs, R. B., & Bellamy, A. R. (1992). Personal and Contextual Predictors of Supervisors' Avoidance of Evaluating Subordinates. *Journal of Applied Psychology*, 77, 462-468.

Fryer, K., Jiju, A., & Ogden, S. (2009). Performance management in the public sector. *The International Journal of Public Sector Management*, 22(6), 478-498.

doi:<http://dx.doi.org/10.1108/09513550910982850>

Fulk, J., Brief, A. P., & Barr, S. H. (1985). Trust-in-supervisor and perceived fairness and accuracy of performance evaluations. *Journal of Business Research*, 13(4), 301-313.

doi:[http://dx.doi.org/10.1016/0148-2963\(85\)90003-7](http://dx.doi.org/10.1016/0148-2963(85)90003-7)

Gabris, G. T., & Ihrke, D. M. (2001). Does Performance Appraisal Contribute to Heightened Levels of Employee Burnout? *Public Personnel Management*, 30(2), 157.

Ghorpade, J., Chen, M. M., & Joseph, C. (1995). Creating Quality-Driven Performance Appraisal Systems [and Executive Commentary]. *The Academy of Management Executive* (1993-2005), 9(1), 32-41.

Greenberg, J. (1986). Determinants of Perceived Fairness of Performance Evaluations. *Journal of Applied Psychology*, 71(2), 340-342. doi:10.1037/0021-9010.71.2.340

Greenberg, J., & Colquitt, J. (2014). *Handbook of Organizational Justice*: Taylor & Francis.

Griffeth, R. W., & Bedeian, A. G. (1989). Employee Performance Evaluations: Effects of Ratee Age, Rater Age, and Ratee Gender. *Journal of Organizational Behavior*, 10(1), 83-90.

Grote, R. C. (2002). *The Performance Appraisal Question and Answer Book : A Survival Guide for Managers*. New York: AMACOM.

Hambardzumyan, K. (2016). Performance and Talent: Pros and Cons of Performance Assessments. In M. Zeuch (Ed.), *Handbook of Human Resources Management*: Springer Berlin Heidelberg.

Harris, M. M. (1994). Rater Motivation in the Performance Appraisal Context: A Theoretical Framework. *Journal of Management*, 20(4), 737-756.

Heneman, R. L., & Wexley, K. N. (1983). The Effects of Time Delay in Rating and Amount of Information Observed on Performance Rating Accuracy. *Academy of Management*

- Journal*, 26(4), 677-686. doi:10.2307/255915
- Herbert, G. R., & Doverspike, D. (1990). Performance Appraisal in the Training Needs Analysis Process: A Review and Critique. *Public Personnel Management*, 19(3), 253.
- Heslin, P. A., & VandeWalle, D. (2011). Performance Appraisal Procedural Justice: The Role of a Manager's Implicit Person Theory. *Journal of Management*, 37(6), 1694-1718.
doi:10.1177/0149206309342895
- Hsin, C.-S. (2016, 2016/4/13). Bus Driver Suspended due to a Heart-Warming Reason. *Apple Daily News*. Retrieved from
<http://www.appledaily.com.tw/realtimenews/article/new/20160413/837822/>
- Huesmann, L. R. (1998). The Role of Social Information Processing and Cognitive Schema in the Acquisition and Maintenance of Habitual Aggressive Behavior In R. G. Geen & E. Donnerstein (Eds.), *Human Aggression: Theories, Research, and Implications for Policy*. New York: Academic Press.
- Iqbal, M. Z., Akbar, S., & Budhwar, P. (2015). Effectiveness of Performance Appraisal: An Integrated Framework. *International Journal of Management Reviews*, 17(4), 510-533.
doi:10.1111/ijmr.12050
- Jawahar, I. M. (2007). The Influence of Perceptions of Fairness on Performance Appraisal Reactions. *Journal of Labor Research*, 28(4), 735-754. doi:10.1007/s12122-007-9014-1
- Jensen, M. C., & Murphy, K. J. (2010). CEO Incentives—It's Not How Much You Pay, But How. *Journal of Applied Corporate Finance*, 22(1), 64-76. doi:10.1111/j.1745-6622.2010.00262.x
- Jepsen, D. M., & Rodwell, J. J. (2009). Justice in the Workplace: The Centrality of Social versus Judgmental Predictors of Performance Varies by Gender. *The International Journal of*

- Human Resource Management*, 20(10), 2066-2083. doi:10.1080/09585190903175639
- Johnson, S. L., & Ronan, W. W. (1979). An Exploratory Study of Bias in Job Performance Evaluation. *Public Personnel Management*, 8(5), 315-323.
- Kellough, J. E. (2012). Managing Human Resources to Improve Organizational Productivity: The Role of Performance Evaluation. In N. M. Riccucci (Ed.), *Public Personnel Management: Current, Concerns, Future challenges* (pp. 173-185): Taylor & Francis.
- Kellough, J. E., & Lou, H. (1993). The Paradox of Merit Pay in the Public Sector: Persistence of a Problematic Procedure. *Review of Public Personnel Administration*, 45.
- Kellough, J. E., Nigro, L. G., & Brewer, G. A. (2010). Civil Service Reform Under George W. Bush: Ideology, Politics, and Public Personnel Administration. *Review of Public Personnel Administration*, 30(4), 404-422. doi:10.1177/0734371x10381488
- Kennedy, P. (2008). *A Guide to Econometrics*: Wiley.
- Kim, P. S. (2011). *Performance Management and Performance Appraisal in the Public Sector*. Paper presented at the United Nations Committee of Experts on Public Administration Conference, New York.
- Kuvaas, B. (2006). Performance appraisal satisfaction and employee outcomes: mediating and moderating roles of work motivation. *International Journal of Human Resource Management*, 17(3), 504-522.
- Lacho, K. J., Stearns, G. K., & Villere, M. F. (1979). A Study of Employee Appraisal Systems of Major Cities in the United States. *Public Personnel Management*, 8(2), 111.
- Latham, G. P., & Wexley, K. N. (1994). *Increasing Productivity Through Performance Appraisal*: Addison-Wesley.
- Latham, G. P., & Yukl, G. A. (1975). A Review of Research on the Application of Goal Setting in

- Organizations. *Academy of Management Journal*, 18(4), 824-845. doi:10.2307/255381
- Lau, A. W., Newman, A. R., & Broedling, L. A. (1980). The Nature of Managerial Work in the Public Sector. *Public Administration Review*, 40(5), 513-520. doi:10.2307/3110205
- Lawler, E. E. I., & Rhode, J. G. (1976). *Information and Control in Organizations*: Goodyear Pub. Co.
- Leventhal, G. (1980). What Should Be Done with Equity Theory? In K. Gergen, M. Greenberg, & R. Willis (Eds.), *Social Exchange: Advances in Theory and Research* (pp. 27-55): Plenum Press.
- Levy, P. E., & Williams, J. R. (2004). The Social Context of Performance Appraisal: A Review and Framework for the Future. *Journal of Management*, 30(6), 881-905. doi:10.1016/j.jm.2004.06.005
- Lewis, G. B. (1997). Race, Sex, and Performance Ratings in the Federal Service. *Public Administration Review*, 57(6), 479-489.
- Liden, R. C., Stiiweli, D., & Ferris, G. R. (1996). The Effects of Supervisor and Subordinate Age on Objective Performance and Subjective Performance Ratings. *Human Relations*, 49(3), 327-348.
- Locke, E. A. (1968). Toward a Theory of Task Motivation and Incentives. *Organizational Behavior and Human Performance*, 3(2), 157-189. doi:http://dx.doi.org/10.1016/0030-5073(68)90004-4
- Locke, E. A., & Latham, G. P. (1984). *Goal Setting: A Motivational Technique that Works!* : Prentice-Hall.
- Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist*, 57(9), 705-717.

doi:10.1037/0003-066x.57.9.705

Locke, E. A., & Latham, G. P. (2006). New Directions in Goal-Setting Theory. *Current Directions in Psychological Science*, 15(5), 265-268.

London, M., Mone, E. M., & Scott, J. C. (2004). Performance Management and Assessment: Methods for Improved Rater Accuracy and Employee Goal Setting. *Human Resource Management*, 43(4), 319-336. doi:10.1002/hrm.20027

Longenecker, C. O., & Nykodym, N. (1996). Public Sector Performance Appraisal Effectiveness: A Case Study. *Public Personnel Management*, 25(2), 151.

Martin, D. C., & Bartol, K. M. (1986). Training the Raters: A Key to Effective Performance Appraisal. *Public Personnel Management*, 15(2), 101-109.

doi:10.1177/009102608601500201

Mayer, R. C., & Davis, J. H. (1999). The Effect of the Performance Appraisal System on Trust for Management: A Field Quasi-Experiment. *Journal of Applied Psychology*, 84(1), 123-136.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An Integrative Model of Organizational Trust. *Academy of Management Review*, 20(3), 709-734.

doi:10.5465/AMR.1995.9508080335

McCauley, D. P., & Kuhnert, K. W. (1992). A Theoretical Review and Empirical Investigation of Employee Trust in Management. *Public Administration Quarterly*, 16(2), 265-284.

McFarlin, D. B., & Sweeney, P. D. (1992). Distributive and Procedural Justice as Predictors of Satisfaction with Personal and Organizational Outcomes. *The Academy of Management Journal*, 35(3), 626-637.

Meyer, H. H. (1975). The Pay-for-Performance Dilemma. *Organizational Dynamics*, 3(3), 39-50.

- Miceli, M. P., Jung, I., Near, J. P., & Greenberger, D. B. (1991). Predictors and Outcomes of Reactions to Pay-for-Performance Plans. *Journal of Applied Psychology*, 76(4), 508-521.
- Mintzberg, H. (1996). Managing Government Governing Management. *Harvard Business Review*, 74(3), 75-83.
- Mohrman, A. M., Resnick-West, S. M., & Lawler, E. E. (1989). *Designing Performance Appraisal Systems: Aligning Appraisals and Organizational Realities*: Wiley.
- Mount, M. K. (1983). Comparisons of Managerial and Employee Satisfaction with a Performance Appraisal System. *Personnel Psychology*, 36(1), 99-110.
- Mount, M. K. (1984). Satisfaction with a Performance Appraisal System and Appraisal Discussion. *Journal of Occupational Behavior*, 5(4), 271-279.
- MSPB. (2005). *Accomplishing Our Mission: Results of the Merit Principle Survey 2005*.
- Nair, M. S., & Salleh, R. (2015). Linking Performance Appraisal Justice, Trust, and Employee Engagement: A Conceptual Framework. *Procedia - Social and Behavioral Sciences*, 211, 1155-1162. doi:10.1016/j.sbspro.2015.11.154
- NARA. (2004). *United States Government Manual*. Office of the Federal Register
- Natbandian, J. (1981). Performance Appraisal: If Only People were not Involved. *Public Administration Review*, 41(3), 392-396.
- Neave, H. R. (1987). Deming's 14 Points for Management: Framework for Success, 561.
- Neely, A., Mills, J., & Gregory, M. (2000). *Getting the Measure of Your Business*: University of Cambridge, Institute for Manufacturing.
- Ng, T. W. H., & Feldman, D. C. (2008). The relationship of age to ten dimensions of job performance. *Journal of Applied Psychology*, 93(2), 392-423. doi:10.1037/0021-9010.93.2.392

- Nohria, N., & Ghoshal, S. (1994). Differentiated Fit and Shared Values: Alternatives for Managing Headquarters-Subsidiary Relations. *Strategic Management Journal*, 15(6), 491-502.
- Nunnally, J. (1978). *Psychometric Theory*. New York: McGraw-Hill.
- OPM. (2011). *A Handbook for Measuring Employee Performance: Aligning Employee Performance Plans with Organizational Goals*: U.S. Office of Personnel Management, Workforce Compensation and Performance Service, Performance Management and Incentive Awards Division.
- Park, S. M. (2012). Toward the Trusted Public Organization: Untangling the Leadership, Motivation, and Trust Relationship in U.S. Federal Agencies. *The American Review of Public Administration*, 42(5), 562-590. doi:10.1177/0275074011410417
- Pearce, J. L., & Perry, J. L. (1983). Federal Merit Pay: A Longitudinal Analysis. *Public Administration Review*, 43(4), 315.
- Pearce, J. L., & Porter, L. W. (1986). Employee Responses to Formal Performance Appraisal Feedback. *Journal of Applied Psychology*, 71(2), 211-218.
- Pichler, S. (2012). The social context of performance appraisal and appraisal reactions: A meta-analysis. *Human Resource Management*, 51(5), 709-732. doi:10.1002/hrm.21499
- Pollitt, C. (2006). Performance Management in Practice: A Comparative Study of Executive Agencies. *Journal of Public Administration Research and Theory: J-PART*, 16(1), 25-44.
- Poon, J. M. L. (2004). Effects of Performance Appraisal Politics on Job Satisfaction and Turnover Intention. *Personnel Review*, 33(3), 322-334.
doi:doi:10.1108/00483480410528850
- Pooyan, A., & Eberhardt, B. J. (1989). Correlates of Performance Appraisal Satisfaction Among

- Supervisory and Nonsupervisory Employees. *Journal of Business Research*, 19(3), 215-226.
- Porter, L. W., Angle, H. L., & Allen, R. W. (2003). *Organizational Influence Processes*: M.E. Sharpe.
- Rainey, H. G. (2009). *Understanding and Managing Public Organizations*. San Francisco, CA: John Wiley & Sons.
- Reinke, S. J. (2003). Does the Form Really Matter?: Leadership, Trust, and Acceptance of the Performance Appraisal Process. *Review of Public Personnel Administration*, 23(1), 23-37. doi:10.1177/0734371x02250109
- Riccucci, N. M., & Thompson, F. J. (2008). The New Public Management, Homeland Security, and the Politics of Civil Service Reform, 877.
- Roberts, G. E. (1994a). Barriers to Municipal Government Performance Appraisal Systems: Evidence from a Survey of Municipal Personnel Administrators. *Public Personnel Management*, 23(2), 225.
- Roberts, G. E. (1994b). Maximizing performance appraisal system acceptance: Perspectives from municipal government. *Public Personnel Management*, 23(4), 525.
- Rodgers, R., & Hunter, J. E. (1991). Impact of management by objectives on organizational productivity. *Journal of Applied Psychology*, 76(2), 322.
- Rotundo, M. (2009). Conduct Performance Appraisals to Improve Individual and Firm Performance. In E. A. Locke (Ed.), *Handbook of Principles of Organizational Behavior*. UK: John Wiley & Sons, Ltd
- Saffie-Robertson, M. C., & Brutus, S. (2014). The impact of interdependence on performance evaluations: the mediating role of discomfort with performance appraisal. *The*

- International Journal of Human Resource Management*, 25(3), 459-473.
doi:10.1080/09585192.2013.792864
- Samuel, O. W., Omisore, M. O., & Atajeromavwo, E. J. (2014). Online fuzzy based decision support system for human resource performance appraisal. *Measurement*, 55, 452-461.
doi:10.1016/j.measurement.2014.05.024
- Schay, B. W. (1988). Effects of Performance-Contingent Pay on Employee Attitudes. *Public Personnel Management*, 17(2), 237.
- Scholtes, P. R. (1993). Total quality or performance appraisal: Choose one. *National Productivity Review*, 12(3), 349-363. doi:10.1002/npr.4040120307
- Schwabe, C. J. (1986). *Performacne Appraisal in Local Government* (Vol. 1 (August)). Washington, D.C.: International City Management Association.
- Skarlicki, D. P., & Folger, R. (1997). Retaliation in the Workplace: The Roles of Distributive, Procedural, and Interactional Justice. *Journal of Applied Psychology*, 82(3), 434-443.
- Slaughter, J. E., & Greguras, G. J. (2008). Bias in Performance Ratings: Clarifying the Role of Positive Versus Negative Escalation. *Human Performance*, 21(4), 414-426.
doi:10.1080/08959280802347213
- Soltani, E., Van der Meer, R., & Williams, T. M. (2005). A Contrast of HRM and TQM Approaches to Performance Management: Some Evidence. *British Journal of Management*, 16(3), 211-230. doi:10.1111/j.1467-8551.2005.00452.x
- Swiercz, P. M., Bryan, N. B., Eagle, B. W., Bizzotto, V., & Renn, R. W. (2012). Predicting Employee Attitudes and Performance from Perceptions of Performance Appraisal Fairness. *Business Renaissance Quarterly*, 7(1), 25-46.
- Swiss, J. E. (1992). Adapting Total Quality Management (TQM) to Government, 356.

- Swiss, J. E. (2005). A Framework for Assessing Incentives in Results-Based Management, 592.
- Taylor, M. S., Tracy, K. B., Renard, M. K., Harrison, J. K., & Carroll, S. J. (1995). Due Process in Performance Appraisal: A Quasi-experiment in Procedural Justice. *Administrative Science Quarterly*, 40(3), 495-523.
- Taylor, P. J., & Pierce, J. L. (1999). Effects of Introducing A Performance Management System on Employees' Subsequent Attitudes and Effort. *Public Personnel Management*, 28(3), 423.
- Thompson, D. (1981). Performance Appraisal and the Civil Service Reform Act. *Public Personnel Management*, 10(3), 281-288.
- Thompson, M. (1995). *Team Working and Pay*. Brighton, UK: Institute of Manpower Studies London.
- Tsai, C.-J., & Wang, W.-L. (2013). Exploring the factors associated with employees' perceived appraisal accuracy: a study of Chinese state-owned enterprises. *The International Journal of Human Resource Management*, 24(11), 2197-2220.
doi:10.1080/09585192.2012.723019
- Tyer, C. B. (1983). Employee Performance Appraisal: Process in Search of a Technique. In S. W. Hays & R. C. Kearney (Eds.), *Public Personnel Administration: Problems and Prospects* (pp. 118-136): Prentice-Hall.
- Tziner, A., Murphy, K., Cleveland, J. N., Yavo, A., & Hayoon, E. (2008). A New Old Question: Do contextual factors relate to rating behavior: An investigation with peer evaluations. *International Journal of Selection and Assessment*, 16(1), 59-67. doi:10.1111/j.1468-2389.2008.00409.x
- Vroom, V. H. (1964). *Work and Motivation*: John Wiley & Sons.

- Walsh, K., & Fisher, D. (2005). Action Inquiry and Performance Appraisals: Tools for Organizational Learning and Development. *The Learning Organization*, 12(1), 26-41.
doi:doi:10.1108/09696470510574241
- Weibel, A., Rost, K., & Osterloh, M. (2010). Pay for Performance in the Public Sector—Benefits and (Hidden) Costs, *Journal of Public Administration Research & Theory*, 20(2), 387-412.
- Wexley, K. N., Sanders, R. E., & Yukel, G. A. (1973). Training Interviewers to Eliminate Contrast Effects in Employment Interviews. *Journal of Applied Psychology*, 57(3), 233-236.
- Wright, P. M., Dunford, B. B., & Snell, S. A. (2001). Human Resources and the Resource Based View of the Firm. *Journal of Management*, 27(6), 701-721.
doi:http://dx.doi.org/10.1016/S0149-2063(01)00120-9
- Yeager, S. J., Rabin, J., & Vocino, T. (1985). Feedback and Administrative Behavior in the Public Sector. *Public Administration Review*, 45(5), 570.
- Zammuto, R. F., London, M., & Rowland, R. M. (1982). Organization and Rater Differences in Performance Appraisals. *Personnel Psychology*, 35(3), 643-658.