2020

Measuring the Impact of Perceptions Towards Performance-Based Cash Rewards on Performance in Federal Agencies: Testing the Role of Public Service Motivation as a Causal Chain

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Measuring the Impact of Perceptions Towards Performance-Based Cash Rewards on Performance in Federal Agencies: Testing the Role of Public Service Motivation as a Causal Chain

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

by

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Richmond, Virginia
April, 2020
Acknowledgements

First, I would like to express my sincere gratitude to my dissertation advisor, Dr. Richard Huff, for his continuous support throughout my dissertation phase, my Ph.D. journey, and related research. For his patience, help, and immense knowledge, I am extremely grateful. He provided me with the appropriate path and directions to start and complete my dissertation successfully. Under his supervision, I was able to overcome many difficulties and challenges to accomplish this tough task. I would like to thank him for his kind guidance, passion, and motivation that have always inspired me to do my best.

Besides my advisor, I would like to thank Dr. Myung Jin for his insightful comments on my methodology which motivated me to widen my research from various perspectives. I remember when I first drafted the theoretical framework of my dissertation and asked for a meeting to discuss it with him. He guided me with passion. He encouraged me to think more broadly about my research. I remember the question he asked me when he first saw my theoretical framework: “What is the story that you want to tell the world?” His question was an eye-opener. The support and the true care he showed me throughout my dissertation journey and other research projects were exemplary.

I also would like to thank Dr. Blue Wooldridge, who is also one of my dissertation members, not only for his comments on my dissertation, but for his insights and deep knowledge in the field of human resources management and public management. I learned a lot from him and I had the great honor to have my name associated with his name on several manuscripts and conference papers. It was a great privilege to get to know a scholar like Dr. Wooldridge and to have the opportunity to learn from his wide experience in this field.
In addition, I would like to thank the rest of my dissertation members: Dr. Nancy Stutts, and Dr. Michael Huffman for their insightful comments, support, and encouragement.

Besides these, I would like to extend my deep thanks and gratitude to other distinguished individuals in the Wilder School who made my path to this point very easy. First, I am grateful to for the moment that brought me to Dr. Susan Gooden’s class of Public Policy II. Not only did I learn about the field of public policy and administration, but I learned how to be a very professional, respectful, and caring educator. After she became Dean of the Wilder School, she supported me and other Ph.D. students to attend conferences in every possible way. With her approval, I was able to represent the Wilder School in various regional and national conferences. Second, I am also grateful to other distinguished faculty and staff in the Wilder School who always have a smile on their face whenever I see them, need help, or just pass by their offices. I can feel it every time I come to the School. They truly care about me, my family, and my academic progress, and I want to greatly thank them:

- Simon Okoth, Ph.D. (Former director of graduate studies of the Wilder School)
- Justine Coleman, Program Assistant
- Elsie Harper-Anderson, Ph.D., Director, Ph.D. Program in Public Policy and Administration
- Sarah Jane Brubaker, Ph.D., Professor, Criminal Justice and Public Policy (Former Director of the Ph.D. Program)
- Pamela Whitlock, Office Manager
- Brittany Keegan, Ph.D., Research Coordinator (my first-year student mentor)
- Ashley Harrison, M.Ed., Assistant Director of Student Success.
- Shajuana Isom-Payne, M.Ed., Assistant Dean of Student Services
To my life-partner, Dr. Abdulrahman Alfaqiri, because I owe it all to you. Many thanks! My husband is my number one support system and has always encouraged me to pursue my educational endeavors. After I got admitted to VCU, he made the decision to relocate from Norfolk to Richmond while he was still a Ph.D. student at Old Dominion University. He was commuting to his School so frequently, which is nearly 100 miles away from where we live in Richmond. He did so because he wanted me to pursue my doctoral studies at Virginia Commonwealth University. I am so happy and proud today that I did not let him down. In every moment of success, he was with me, celebrating and applauding. In every moment of despair, he was there supporting and encouraging me. He is the real person behind every single achievement I have had at this School. I treasure all of these moments and I can hardly find words to describe the immense support with which he surrounded me. He is a true educator and a great husband and father.

To my mother, sisters, and brothers, many thanks for your continuous support and encouragement.

Lastly, special thanks to my sponsor, the Government of Saudi Arabia, for its tremendous support throughout this journey, particularly to its representative here in the United States, the Saudi Arabian Cultural Mission (SACM).
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Definition of Key Terms

Following are the definitions of keywords and concepts used in this study:

- **Organizational citizenship behavior (OCB)** is defined as an “individual's behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization” (Organ, 1988, p.4).

- **Work Unit** is a small group of employees or teams who are working to achieve a common goal, generally between 5 and 20 people and is considered the smallest group in the organization (U.S. Office of Personnel Management, 2017).

- **Public Service Motivation (PSM)** refers to “an individual service disposition to respond to motives grounded primarily in public institutions and organizations” (Perry & Hondeghem, 2008, p.6).

- **Self-sacrifice**, which is one of the identifying motives of public service motivation, refers to public servants’ willingness to forego personal interests or financial gains in favor of achieving the intangible rewards and interests of the public.

- **Commitment to Public Interest**, which is one dimension of public service motivation, refers to a norm-based motive that is centered around the desire to serve the public and public organizations. Example of behaviors related to this dimension can be seen in an individual’s desire to participate in activities important to the public, such as advocating for special interest and developing a public policy.

- **Performance-Based Cash Rewards** refer to the “lump-sum cash payment that requires the most recent rating of record as the sole justification for the reward” (U.S. Office of Personnel Management, 2016b, para 1).
• **Simple Mediation Model** is a statistical technique that is used to help answer how at least one causal predictor “X” is proposed as influencing variance on an outcome variable “Y” through a single intervening variable “M” (Hayes, 2013).

• **Crowding Theory of Motivation-Crowding in Effect** suggests that external interventions in the form of monetary rewards can increase or “crowd in” intrinsic motivation if properly implemented. This effect is termed as “the hidden gains of rewards” (Frey, 1994).

• **Crowding Theory of Motivation-Crowding out Effect** suggests the opposite effect in which external interventions in the form of monetary rewards are expected to diminish, weaken or “crowd out” intrinsic motivation under certain circumstances. This effect is termed as “the hidden costs of rewards” (Frey & Jegen, 2001).

• **Public Choice Theory** is defined as an “economic study of non-market decision-making, or simply the application of economics to political science” (Mueller, 2003, p.1). It suggests that performance can be improved and enhanced by allocating monetary incentives to reward high performance.

• **Expectancy Theory** suggests that employees will exert extra effort only if they believe that it will lead to a preferable outcome. In the case of pay for performance, this means that employees will work hard to achieve their agency’s objectives only if they value monetary rewards and believe that those rewards are the result of their increased efforts.

• **Pay for performance** is the type of pay that is tied to meeting individual performance measures based on performance appraisals. The pay is added to individual employee’s base salary.
• **Public service** refers to “the motivation of people who feel a sense of duty or responsibility for contributing to the welfare of others and to the common good of the community or society” (Perry & Hondeghem, 2008, p.17).

• **Intrinsic Motivation (Public Employees)** represents the desire to work to achieve the common good of the community or society rather than for achieving individualistic gains, such as a pay raise or a promotion. This means that the absence of tangible rewards, whether extrinsic or non-monetary rewards, do not change the level of desire and/or enjoyment to serve the public, which is one facet of the core theory of public service motivation.

• **Extrinsic Motivation (Public Employees)** represents the desire to work to achieve certain individualistic gains in the form of rewards through working to achieve the common good of the community or society. This means that the absence of these types of rewards is accompanied by a lack of desire or enjoyment to serve the community.
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By: Layla F. Alanazi

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

Virginia Commonwealth University, 2020

Major Advisor: Richard Huff, Ph.D.

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Abstract

Significant research has demonstrated how public service motivation (PSM) predicts individual outcomes, such as job satisfaction, organizational commitment, and choice of employment sector. Other research has demonstrated how PSM serves as an outcome variable. Between these two strands of PSM research, there is a knowledge gap concerning how PSM acts as a mediator. This study contributes to the growing literature on PSM by proposing and testing a causal model that estimates the direct effect of perceptions towards performance-based cash rewards on performance as well as their indirect effect through their influence on PSM, which then influences individual and organizational performance. Drawing from the research on public choice theory, expectancy theory, and motivation crowding theory, this study investigates the mediating role of public service motivation (PSM) in the link between perceived perceptions towards performance-based rewards and two performance-related behavioral outcomes: organizational citizenship behavior and work-unit performance. The research questions for this
study are as follows: Does public service motivation (PSM) mediate the relationship between performance-based cash rewards and organizational citizenship behavior (OCB)? Does public service motivation (PSM) mediate the relationship between performance-based cash rewards and work-unit performance?

Data from a sample of 244,777 employees from 80 federal agencies show that performance-based cash rewards positively affect performance both directly and indirectly through their significant influence on public service motivation (PSM). This study also finds that PSM has a more mediating influence on organizational citizenship behavior (OCB) than on work-unit performance (WUP). Based on the mediation results, the proportion of the total indirect effect of performance-based cash rewards on OCB that is mediated by PSM was 42% of the total effect of PBCR on OCB (95% BCI: .0380, .0403), while the proportion of the total indirect effect of the impact of performance-based cash rewards on WUP that is mediated by PSM was 29% of the total effect of PBCR on WUP (95% BCI:. 0298, .0319).

This study adds to the PSM research by demonstrating that PSM is a trait that can be shaped and improved through the influence of certain organizational practices, such as cash rewards in this study. Additionally, this study offers insights and recommendations for federal public managers as well as human resources practitioners to consider looking at the extrinsic rewards as a primary component of the reward system and their impact on increasing employees’ public service motivation levels, which in turn, improves their performance.
Organization of the Study

This study is organized into five chapters as follows:

**Chapter One** provides an introduction to the study including a statement of the problem, information of the past civil service reform efforts, examples of civil service policies, and problems that arise in performance management in the public sector. This chapter concludes with stating the significance of this study, the conceptual framework and research questions.

**Chapter two** discusses the literature regarding the relationship between PSM and performance-based cash rewards and PSM and OCB and work-unit performance. The review of literature includes a discussion of the previous studies that focused on two opposing views among scholars of public administration regarding whether government should or should not assemble the market model practices, particularly its performance management system. It will also include a discussion of four theories that are used to examine the relationship among the study’s variables, namely public service motivation, public choice theory, expectancy theory and motivation crowding theory. This discussion provides the theoretical foundations and empirical evidence that lead to the establishment of a series of hypotheses.

**Chapter Three** provides an overview of the techniques and methods used, describes the variables, and the plan for analysis. Also, it includes a discussion of the study’s measures of the dependent, independent, mediator, and control variables along with a discussion of the sample size and data used to execute this study.

**Chapter Four** includes the findings and analysis of the data which is divided into five parts. The first part provides the descriptive statistics and a summary of the correlations among variables. The second part provides a discussion of the common method bias (CMB) since the data is
collected via a self-administered survey. The third part reviews the research questions, hypotheses, and variables of the study. The fourth part discusses the analysis plan using Hayes’ PROCESS as the statistical technique to arrive at the mediation results. The last part of this chapter provides an overview of the main findings of the study and results of the hypotheses testing.

_Chapter Five_ discusses the key findings, implications for public policy and administration the study’s limitations and the researcher’s thoughts and recommendations for future research.
Chapter One: Introduction

1. Civil Service Reforms: Historical Background

Civil service reforms are common in the history of American public administration. In its attempts to innovate and improve the delivery of public services and develop federal employees’ performance, the government has undertaken the responsibility to implement periodic changes to its performance and personnel management systems (Lee, Cayer, & Lan, 2006; Crowell & Guy, 2010).

The use of the Civil Service Reform as a concept is muddled in the literature, and there is a lack of studies that provide specific operationalization of such reforms. Also, there exists a lack of definitions that describe the scope of these reforms at the federal level. However, there are few definitions in the literature describing the common characteristics of these reforms. For example, Condrey and Maranto (2001) define radical reform of the civil service as personnel systems that erode employee tenure or design decisions regarding promotion, compensation, and particularly hiring and separation, and leave them in the hands of public managers rather than in personnel offices. Woodard (2005) defined the civil service reforms as the introduction of merit-based systems for specific organizational practices, such as the hiring process. For McGrath (2013), radical civil service reforms are defined through the degree of decentralization of human resources functions, mainly through the adoption of at-will employment. Ujhelyi (2014) operationalized the civil service reforms regarding laws and legislation associated with the reform. In his article, he described two main principles that provide the defining roots for the reform: selection and control. He argued that the civil service reforms can be operationalized through two separate laws: one that governs the selection of civil servants via competitive examination and the
civil service protection laws that limit the political influence of elected officials, such as standardized pay scales and job tenure.

The majority of studies written after the Civil Service Reform Act of 1978 about the adoption of the pay for performance systems in the public sector show negative findings. For example, Demarco and Nigro (1983) studied the extent to which the new performance management system achieved its desired objectives. Their results suggest that there is a high degree of supervisory resistance to comply with the new provisions due to increased workload and the potential for conflict raised with the new procedures. Also, they assert that the performance appraisal process created unfair and unequal treatments among employees, where there were indications of supervisor favoritism and manipulation in the distribution of evaluations. Similarly, Perry et al. (2009) argue that the lack of transparency and limited budget have narrowed the success of the implementation of this system. As a result, efforts to implement a useful version of the pay for performance continue to fail (Brewer and Walker, 2013; Nica, 2013).

Two decades after the 1978 civil service reform, the majority of research findings focused on the adoption of pay for performance systems in public organizations and discussed various problems with funding to reward higher performance. For example, Rainey (1979) found that government managers perceive difficulties in attaching performance to incentives. According to his study, the new formal procedures made it difficult to reward managers with higher pay. Ingraham (1993) conducted a study to examine the rationale behind the diffusion of the pay for performance system in the states that adopted it. Her findings indicate that of the 23 states that adopted the system, three of them discontinued it, and a large majority of states reported problems with funding.
According to her study, only 4% of the states that adopted the system assert that they receive funding every year. In another study, approximately 47% of employees contend that performance rewards are not distributed fairly, 70% of personnel executives reported a lack of sufficient funding to reward performance, and 58% of employees reported that they are not adequately compensated for their performance (Kellough & Selden, 1997). Kellough and Nigro (2002) conducted a study of Georgia State employees evaluating the impact of the pay for performance system. They found that 90% of state employees did not believe good performers were being rewarded with meaningful pay raises. In the same study, the pair reported that state salaries were around 37% below average market salaries for certain skilled positions. A year later, Bowman et al. (2003) confirmed that 72% of employees reported high performers were not rewarded financially. Other studies that show a negative attitude towards performance appraisal systems include Lee et. al (2006) and Kellough and Nigro (2002).

In a similar vein, Condrey and Battaglio (2006) presented a case study that compares and contrasts the provisions of the Civil Service Reform efforts in five states, namely Florida, Georgia, Louisiana, Alabama, and North Carolina. Unlike the original goal of the reforms to improve the work of government bureaucracy, spurred by addressing failures at the federal level, the pair found that there was an inverse policy diffusion exhibited in the reforms adopted by these states, particularly after 9/11. Instead of improving the efficiency of bureaucracy, the reform in Florida suffers from many problems as a result of privatization contracts assigned to a private contractor during the Jeb Bush administration. The research suggests that the failed business model in the state of Florida was not due to
the policy itself, but due to implementation problems and the reliance on quick fixes rather than incremental change based on proper resources.

To further highlight the importance of this study, the following section provides background information of the past civil service reform efforts, examples of civil service policies, and problems that arise in performance management in the public sector. This introductory section concludes with the significance of the study, the conceptual framework and research questions. In the second section, literature on the relationship between public service motivation and performance-based cash rewards will be discussed, along with public service motivation and organizational citizenship behavior and work-unit performance, followed by the theories, and a series of hypotheses. The third section explains the statistical techniques and methods used, describes the study’s variables, and explains the plan for analyzing the data.

2. Civil Service Reform Policies and Studies in Public Management

The government reforms began with the Pendleton Act, which was passed in 1883, as the first public policy that ensured all federal employees are hired based on merits, moving away from political influence. The Pendleton Act consisted of three merit principles: fair competition for jobs in the public service, neutral examination for admission to public-service jobs, and protection from political coercion (Ingraham & Rosenbloom, 1990). Some studies attribute the emergence of this act to incidents of corruption in bureaucracy (Ujhelyi, 2014; Maranto, 1998). Others suggest that the act came in response to the inequality of the spoils system, a practice that ensures positions for campaign workers after a political party wins an election, which politicized public service. Woodrow Wilson (1887) tried to tackle this problem in bureaucracy, by arguing that effective administration should rely on separating policy making from policy administration.
In the context of political impact on administration, Hoogenboom (1961) emphasized that politicians dominated civil service before the issuance of the Pendleton Act. Symptoms of this dominance were seen in the behavior of political appointees when controlling the payroll of their staff and transforming it into a primary source for financing campaign projects. Hoogenboom (1961) also noted that some civil servants lost their jobs for failing to contribute to campaign projects. As one of the civil servants commented on this situation, “there was no system save that of chaos; no test of integrity saves that of partisanship” (Hoogenboom, 1961, p.301). In response, the Pendleton Civil Service Act was passed in 1883 as an attempt to correct the situation, cure the problems manifested in the public service and control and manage the federal labor force (Ujhelyi, 2014).

Since the issuance of the Pendleton Act in 1883, neutral competence, a concept espoused by Kaufman (1956), has dominated the U.S. government and became the sign that characterized the merit system (Woodard, 2005). Kaufman (1956) described neutral competence as the “ability to do the work of government expertly, and to do it according to explicit, objective standards, rather than to personal or party or other obligations and loyalties” (p. 1060). Under this definition, neutral competence can also mean political neutrality, which Kernaghan (1986) defined as “a doctrine requiring that public servants do not engage in activities which impair—or appear to impair—their ability to carry out their official duties in a politically impartial manner” (Kernaghan, 1986, p. 640).

Years after the passage of the Pendleton Act in 1883, American bureaucracy continues to examine the efficiency and effectiveness of its personnel management practices. Many policies were passed for the purpose of improving the performance of the public sector employees. There are many policies that passed after the Pendelton Act. These include the Classification Act of
1923, which brought the rules of scientific management to the American federal government
(Milkovich, Wigdor, & Broderick, 1991) and established the first uniform standards for
compensation levels based on grade codes. This act was followed by many attempts to organize
the merit system, such as the Brownlow Committee of 1937, the Incentive reward Act of 1954,
the Salary Reform Act of 1962, and the Performance Management and Recognition System Act
of 1984 which covers grade codes 13-14 and is aimed at strengthening pay for performance
principles (Perry, Petrakis, & Miller, 1989). For the sake of brevity, the most significant policies
that addressed the performance of the public sector are briefly discussed as follows:

i. The Civil Service Reform Act (CSRA) -1978

This act brought the most comprehensive and significant civil service reform principles
since the issuance of the Pendleton Act in 1883 (Lee et. al, 2006). Among the influences
pressuring the Carter administration to enforce immediate change was the increased public
demand for better service, increased distrust in bureaucracy, and increased power of unions and
interest groups (Knudsen, Jakus, & Metz, 1979). One of the major goals of the Civil Service
Reform Act of 1978 was to change the old performance management system of the public sector
into an objective performance management system that is based on merit pay, bonuses, and
incentives (Daley, 1990). Other provisions include an elimination of job security in favor of at-
will employment, (Bowman, et al., 2003), and deletion of merit protections (Woodard, 2005).

One solution offered under the CSRA to address bureaucratization was decentralization.
Decentralization is known as “the assignment of public functions to subnational governments
along with structures, systems, resources, and processes that support implementing these
functions to meet certain public sector goals” (Smoke, 2015, p.98). Under this act, Title V,
entitled “merit pay” established specific guidelines for merit pay system that cover all managerial or supervisory employees at grades GS-13 through GS-15 (U.S. Congress, 1978).

There are additional civil reforms efforts that followed the CSRA under the Reagan, Bush, and Clinton administrations. Each reform involves multiple values, but all of them focus on improving the performance of federal employees. The following section discusses examples of prominent civil service reform policies during the Clinton Administration.

ii. National Partnership for Reinventing Government (NPR)-1993

On March 3, 1993, President Clinton announced the creation of the National Partnership for Reinventing Government (NPR) (known in the past as the U.S. National Performance Review). He assigned Vice President Gore to work on this project and report the findings of this performance review within six months. The problems from which the government personnel system suffered can be best described by the U.S. National Performance Review report (1993):

“Today, the system's functional operating components present a burdensome array of barriers and obstacles to effective [Human Resource Management]. Hiring is complex and rule-bound; managers can't explain to applicants how to get federal jobs. The classification and pay systems are inflexible. The performance management system is not adequately linked to the organization's mission and goals” (p.5).

iii. Winter Commission – 1993

The National Partnership for Reinventing Government (NPR) was not alone in the call for a more effective public personnel management. On June 24, 1993, the National Commission on the State and Local Public Service, known as the Winter Commission presented its report to President Clinton with recommendations aimed at changing the government’s personnel system to make it more effective. The Winter Commission provided ten recommendations aimed at
restructuring the government personnel management system through “removing the barriers to executive leadership, to lean and responsive government, to a high-performance workforce, and to meaningful citizen involvement” (Thompson, 1994, p.5). Examples of these recommendations include decentralization of the merit system, more scrutiny on the written tests when hiring for new jobs, a clearer procedure for firing employees, greater freedom for managers to reward higher performance with extra pay, etc. Among the significant outcomes of the government restructuring adopted by President Clinton was the documented savings of $136 billion, reduction of the workforce by 252,000 positions, and the creation of an effective electronic government system (U.S. National Performance Review, 1993).

The following section discusses the significance of the study, the contemporary studies that examine the performance of the public sector through the lens of public service motivation as one of the main theoretical foundations of this study. This section also includes a discussion of the study’s research questions, the theoretical framework, and a set of definitions of the main concepts used in this study. This section concludes with an overview of the remaining chapters of this study.

3. The Significance of the Study

There is general consensus among scholars of public administration that the civil service reforms, particularly the adoption of the financial rewards as part of the pay for performance system, have not achieved the desired outcomes (Condrey & Bataglio, 2007; Crowell & Guy, 2010; Hays & Sowa, 2006; Lee et al., 2006; Bowman et al., 2003; Demarco & Nigro, 1983; Daley, 1990). Instead, they created numerous unintended consequences for government employment, such as the lack of financial support and cash bonuses to reward high performers. Part of the problem was associated with the fact that the Civil Service Reform Act of 1978 failed
to provide for the efficient evaluation of the value of pay for performance system prior to its wider implementation (Ingraham, 1993).

Due to the increase demand for government services in recent years, there is a need to conduct more empirical studies to further examine the behavior of public servants as an important unit of analysis. This study will go beyond studying why public servants are attracted to pursue a job in government, but also to answer why they remain in the job. As a performance standard, observing the motivational patterns of public servants in bureaucracy is imperative in research. Working in bureaucracy represents one’s best interest in serving the public that entails being capable of providing a service not only captured by self-interest but by public interest as well. From an organizational perspective, observing public servants’ performance behaviors can help public managers learn what is working in their organizations so that they can invest existing resources into this specific activity. Also, the study will help public managers know what is not working so they are fully aware of this nonproductive activity and they can invest their resources on practices directed toward improving employees’ performance.

On the other hand, the debate surrounding monetary rewards as a motivational tool for improving performance and their adoption in federal agencies is still debatable. The attempt to demonstrate a link between performance and increased pay has remained a problematic issue for the federal government for many years (Milkovich, Wigdor, & Broderick, 1991). Federal supervisors are confronted with the difficult task of boosting monetary rewards for high performers, despite the increasing research on the desirability of this type of reward by federal service employees (Alonso & Lewis, 2001). What makes this finding hard to prove is the essence of the public service motivation (PSM) theory, which suggests that people with high levels of PSM are less likely to be motivated by extra pay (Christensen, Paarlberg, & Perry, 2017; Perry,
1996; Perry, Petrakis, & Miller, 1989). Also, the research on PSM suggests that public organizations that attempt to attract people with high levels of PSM are less likely to adopt monetary incentives to manage individual performance (Perry, Engbers, & Jun, 2009; Perry & Hondeghem, 2008). However, this study expects that an employee’s level of public service motivation changes over time as PSM is not a stable trait, as observed by Perry and Vandenabeele (2008). This issue is exacerbated when only 23% of federal employees see the connection between their effort, performance, and the reward they receive (U.S. Merit Systems Protection Board, 2012a). This is vital to address; as the more an employee sees the connection between the type of reward offered and their performance, the more the likelihood that they will achieve a high-performance rating.

Most research about employees’ perceptions towards new performance management systems shows negative findings. Pay-for-performance systems based on rewarding good performers or motivating employees to be high performers were viewed negatively. As a result, efforts to implement versions of pay for performance continued to fail (Brewer and Walker, 2013; Nica, 2013). Today, ensuring that the chosen performance management system matches the needs of public service employees will make public organizations more productive and competitive. To help public agencies be more effective and efficient, they need to measure the performance of their employees by revealing not only when the federal agencies are failing but also when they are doing a good job (Behn, 2003). From a policy standpoint, the government wanted to make sure that extra cash rewards, as a motivational tool, are effective in motivating employees to perform at a higher level.

In light of these data points, the theory of public service motivation (PSM) needs to be examined closely. Public service motivation (PSM) is defined as "an individual service
disposition to respond to motives grounded primarily in public institutions and organizations” (Perry & Hondeghem, 2008, p.6). The PSM theory suggests that employees with high levels of PSM will likely be committed to their work in the public sector because of factors they see as valuable and meaningful. One of the fundamental assumptions of PSM theory is that employees with high levels of PSM are likely to perform better than employees with lower levels of PSM. Specifically, self-sacrifice, which is one of the basic dimensions of PSM, suggests that people with high levels of PSM are expected to spend more time on the job because of meaningful aspects that they value in public organizations. This will improve their motivation to serve the public which, in turn, improves their performance. One example of such behavior in federal agencies includes providing innovative ideas to improve the work in the absence of tangible rewards. This relationship has been investigated in previous studies and most of them reported positive findings of PSM on job performance (Alonso & Lewis, 2001, Andersen & Serritzlew, 2012; Belle, 2013).

Despite more than twenty-five years of research in developing the theory of public service motivation (PSM), there is a lack of empirical research to test the role of PSM as a mediator between several organizational attributes. Testing PSM as a mediator variable is important because policymakers need to be informed about how performance-based rewards influence variation in PSM, which in turn influence variation in performance. The findings from this study will serve to guide policymakers in understanding what motivates public service employees and how to address these motivations when designing or implementing a new performance management system. The widespread adoption of performance-based rewards as a motivational tool in recent years has not been accompanied by an increase in research regarding the mediating role of public service motivation as to answer whether performance-based
rewards—adopted for many years now—have been successful in motivating civil service employees to become high performers. Thus, the present study contributes to a better understanding of performance in federal agencies by clarifying the mechanisms through which performance-based rewards influence variations in individual and organizational performance indirectly through the mediating variable of PSM (see the conceptual framework in Figure 1). Therefore, the focus of this study is on examining and testing the indirect effect, as the direct effect of performance-based rewards on individual and organizational performance in the literature has mixed findings (Demarco & Nigro, 1983; Perry et al., 2009; Brewer & Walker, 2013; Nica, 2013; Lee et al., 2006; Kellough & Selden, 1997). The present study attempts to answer the following research questions:

RQ1. Does public service motivation (PSM) mediate the relationship between performance-based cash rewards and organizational citizenship behavior (OCB)?

RQ2. Does public service motivation (PSM) mediate the relationship between performance-based cash rewards and work-unit performance?
Figure 1. Conceptual framework illustrating the indirect effects of performance-based cash rewards on two performance related outcomes.

Note. OCB=Organizational citizenship behavior, PSM=Public service motivation.
Chapter Two: Literature Review

1. Literature Review, Theory, and Hypotheses

The literature review is divided into three sections. The first section discusses the scholarly examination of the adoption of private sector practices into public sector organizations that came with New Public Management (NPM). The second section discusses the theory of public service motivation (PSM), employee performance, performance-based cash rewards, the theoretical basis of the relationship among the variables, and the scholarly efforts that investigated them. The third section discusses the theoretical framework, gaps in the literature, and what scholars have overlooked when examining these specific concepts. The literature review section is followed by a discussion of the research methodology, study implications, and the plan for analyzing the data.

i. Government as Business

During the 1990s, the traditional model of public administration was challenged by a new form of management that started to evolve with one important objective: to improve the performance of the public sector organizations. Considering the need for a reform and a shift from the traditional model of public administration, Christopher Hood (1991) was the first who coined the term New Public Management (NPM) in his work, A Public Management for All Seasons. Before Hood (1991), very little effort had been made to distinguish or theorize the work of the public sector and how it overlaps with private sector processes and structures. For Hood (1991), public administration should represent a marriage between two streams of thought: one is built on the ideas of transparency and incentive structures observed in the private sector, while the other is the emergence of business-type managerialism. Another contribution to public administration literature that he provided was creating seven different interrelated components of
NPM, which include, hands-on professional management, explicit measures of performance, and greater emphasis on output controls. The view of considering the functions of public administration as a business model is echoed earlier in the work of Wilson (1887) when he argued that the field of administration is a field of business.

Similarly, Rhodes (1996) called for a new way of defining “governance” and used this term to refer to “new public management”, “self-organizing networks”, and a “minimal state”. Under the discussion of new public management, he brought the concept of “managerialism” in the new form of management. He argued that managerialism—the introduction of private sector management practices to the public sector—makes it more efficient. In a similar vein, Peters and Pierre (1998) discussed the obsolete model of public administration in society. They discussed the concept of “governance”, which means the degree of control and influence that government used to regulate its processes, and argued that it was outmoded and should be changed. The rationale for their call for a new form of management stems from two main factors. First, the creation of networks and less formal partnerships between actors in the public sector or government and actors in the private sector, necessitate a new form of management. Second, the private sector has influence (dominance) on democracy in the contemporary political system over public policy through structures, which in turn has many implications for democracy in the contemporary political system. Therefore, they call for a hybrid form of management or an organizational reform in the public sector that blends both public and private attributes in ways that “might not be possible in more conventional structural arrangements” (p. 226).
ii. Government Should Not Operate as Business

Despite the vast majority of studies that discuss the positive impact of NPM on government’s efficiency and improved quality of services, some other studies show that the impact is not always positive. According to the principles of NPM, everything had to be dealt with and appreciated based on its face value and what profits it could bring to the agency. For some scholars, this approach acts against the basic concepts and ideals of public administration, in which public services are “universal entitlements and should be provided regardless of the gravity of need, cost or ability to pay” (Diefenbach, 2009, p. 895). A similar argument was raised by Wilson (1989), who corroborated that bureaucracy and private industry are different and, therefore, should not be compared. For Wilson (1989), the differences between the two sectors stem from three basic distinctions. First, the government does not work to maximize profits. Second, bureaucracies do not have the discretion that private businesses have to allocate funds. And third, bureaucracies serve the goals that have been chosen by someone else. The same idea was discussed by Pollitt (2002) and Armstrong (1998) who also argue that the public and private sectors have different ethical, constitutional and social dimensions that make them different from each other. This difference makes adopting private sector management practices inefficient when implemented into bureaucracies.

From an ethical standpoint, some scholars argue that the comparison between business enterprise structures and government services is not recommended, and the applicability of government as business is bound to fail. In this vein, Adams and Balfour (1998) criticized the idea of excessive professionalism required in doing the job as part of the technical-rational tradition and termed the practices of government that lead to unethical outcomes as “administrative evil”. They observe, “…organizational dynamics that escalate the chances of
disastrous outcomes can be termed administrative evil (albeit with considerable caution), if the members of an organization could reasonably have been expected to do better” (p. 80).

The idea of capturing personnel systems of the private sector and applying them to government organizations was, and still is, debatable. Some studies raised the question of whether the private sector personnel systems are successful in the first place. One year after the reforms of 1978, Rainey (1979) investigated the impact of the civil service reform on incentives, through comparing the attitudes of managers towards the new incentives and how they are linked with pay. The main contribution made by the author was not only documenting the area of complexity and contradiction of the implementation phase of the reform but more broadly developing measurable constructs and concepts that are useful for replications.

Fifteen years after the reform, Peters and Savoie (1994) wrote their review of the civil service reforms. The pair argued that the political leadership misdiagnosed the problems occurring in the public sector and provided a review of what government suggested as remedies to these problems. For them, the main problems from which the bureaucracy suffered that necessitates a reform are 1) the lack of competition in providing services to citizens “monopoly”, 2) the need to control public service through inclusion of civil service as key item in the public policy agenda, 3) poor individual management, and 4) financial management. In the same vein, they criticized the solutions provided by the government and called for more creativity in considering policy proposals.

iii. Government Performance

The concept of performance is muddled in the literature and there is no consensus regarding a single definition to refer to job performance. Loon (2017) used the term individual performance to refer to the employees’ contribution to achieving the mission of their
organizations. Job performance in the study of Caillier (2010) refers to how well an employee performs his or her work-related duties. Aguinis (2009) took a more holistic approach to define performance. For him, performance as a concept refers to a set of behaviors and describes how employees behave in organizations and not the outcomes of their work. Also, he argued that the characteristics of this behavior could be either evaluative (judged as negative, neutral, or positive) or multidimensional (many kinds of behaviors can be used to refer to achieving organizational goals).

Previous studies that measured the performance of the federal employees used different dimensions or measures (see Table 1). For example, the study of Alonso and Lewis (2001) measured performance through the performance ratings and grade levels using the Federal Employee Viewpoint survey. The pair found a negative correlation between grade level and performance ratings on PSM. Another popular method for measuring employee performance is using a multidimensional approach by identifying the differences between task-based performance and contextual-based job performance (Goodman & Svyantek, 1999). Goodman and Svyantek (1999) differentiate between the two concepts by arguing that task-based performance measures job-related (in-role) activities, while contextual-based job performance refers to extra-role activities. An example of assessing the task-performance method used in their study is using employees’ perceptions of how soon they believe they will be promoted (promotion expectations). Other studies used job-related knowledge and skills to measure task-based performance because KSAs usually vary with task proficiency (Fernandez & Moldogaziev, 2011).
Table 1. Measurements of performance-1999-2017

<table>
<thead>
<tr>
<th>Measure/Indicator</th>
<th>Definition</th>
<th>Studies</th>
<th>Notes</th>
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<tr>
<td>Task-performance: In-role</td>
<td>The activities that employees perform in exchange for pay.</td>
<td>(Goodman &amp; Svyantek, 1999; Fernandez &amp; Moldogaziev, 2011; Kim, Kolb, &amp; Kim, 2013; Jin, Mcdonald, &amp; Park, 2016)</td>
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<tr>
<td>Contextual performance: Extra role (Also called organizational citizenship behavior)</td>
<td>The extra-role activities are those that not part of formal role requirements but are viewed as promoting organizational effectiveness and improve its overall image</td>
<td>Goodman &amp; Svyantek (1999)</td>
<td></td>
</tr>
<tr>
<td>Job Performance</td>
<td>Performance ratings and grade levels</td>
<td>Alonso &amp; Lewis (2001)</td>
<td>Used Federal Employee Viewpoint Survey (FEVS)</td>
</tr>
<tr>
<td>Performance ratings and supervisor goals</td>
<td>Performance ratings: the last performance appraisal score an employee receives Supervisor goals: those goals that include both implicit and explicit objectives necessary to determine performance</td>
<td>Caillier (2010)</td>
<td></td>
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<tr>
<td>Perceived Performance</td>
<td>Work-unit performance</td>
<td>(Fernandez &amp; Moldogaziev, 2011)</td>
<td>One item from the FEVS</td>
</tr>
<tr>
<td>Performance</td>
<td>Work unit performance and agency performance</td>
<td>(Fernandez &amp; Moldogaziev, 2013)</td>
<td>Two items item from the FEVS</td>
</tr>
<tr>
<td>Performance-related behaviors</td>
<td>Refer to specific behaviors employees performed as the main components of their job (output, service outcomes, democratic outcomes, and responsiveness)</td>
<td>Loon (2017)</td>
<td>Democratic outcome behavior is positively related to PSM</td>
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</table>
A large number of studies use employees’ own performance appraisal ratings to measure performance. The rational behind the popular use of performance appraisals is that they are not only used an assessment of the ratings assigned to employees, but rather a reflection of the entire performance process (Daley, 2007). Measuring perceived performance through employees’ perception of their ratings was used in several studies in the literature (Yang & Kassekert, 2010; Leisink & Steijn, 2009; Loon et al., 2016; Alonso, Pablo; Brewer & Selden, 2000; Caillier, 2014; Bright, 2007) with successful findings (i.e. support for the research hypotheses).

At the organizational level, Selden and Brewer (2000) adopted a quantitative, non-experimental comparative design to examine the impact of various individual and agency level factors on the level of organizational performance by measuring variation in employees’ perceptions. The population included 1.7 million full-time employees in all federal agencies. To understand which organizations are performing well, the authors took the mean scores of the six items measuring the organizational performance of all organizations. The mean score was 15.66 which suggests that public organizations were performing adequately but needed some improvement, specifically on making use of employees’ knowledge and providing the public with return on tax dollars. The authors use multiple regression to test the impact of multiple agency-level and individual-level predictors on organizational performance. The model came back significant at $p > 0.05$, and the predictors explained 70% of the variance on employee perceptions towards organizational performance. The interesting finding is that agency-level predictors are found to be more powerful measures of organizational performance than individual-level factors. Using the standardized coefficient or beta weight, the authors find that organizational culture with its four components (teamwork, efficacy, concern for the public interest, and protection of employees) has the most powerful impact on organizational
performance compared to other factors in the model. All agency level factors are found to be strong predictors of organizational performance, except red tape, $p > 0.05$.

There are commonly some observed weaknesses when it comes to measuring performance. Some studies took a holistic view or use a general term to refer to a specific type of job behavior. Others use one survey question to measure one specific aspect of individual performance without identifying the limitation of this approach (e.g. Brewer & Selden, 2000).

2. Theory and Hypotheses

i. The Link between the Independent Variable and Mediator: Performance-Based Cash Rewards and Public Service Motivation (PSM)

Performance-based rewards are defined as the “lump-sum cash payment that requires the most recent rating of record as the sole justification for the reward” (U.S. Office of Personnel Management, 2016b, p.1). These cash rewards must be based on a rating of record at the "fully successful" level (or equivalent) or higher and must make meaningful distinctions based on levels of performance.

Performance-based cash rewards are part of the pay for performance system. The pay for performance system is divided into two basic plans: one plan that adds payout to base pay and one that does not add payout to base pay (see Table 2) (Milkovich, Wigdor, and Broderick, 1991; Aguinis, 2009). The plan that adds payout to base pay includes merit plans and small group incentives. The other plan, which does not add payout to base pay, includes piece-rate bonuses and profit-sharing bonuses.
Table 2. Pay for performance plans as classified by Milkovich and Wigdor (1991)

<table>
<thead>
<tr>
<th>Added to Base Salary</th>
<th>Definition</th>
<th>Not Added to Base Salary</th>
<th>Definition</th>
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<tr>
<td>Merit plans</td>
<td>Pay that is tied to meeting individual performance measures based on</td>
<td>Piece rate, and</td>
<td>Payout paid when production meets the performance standard.</td>
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<td></td>
<td>performance appraisals. The pay is added to individual employee’s base salary</td>
<td>commission bonuses</td>
<td>-Paid once a year or quarterly</td>
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<tr>
<td>Small group incentives</td>
<td>A monthly bonus paid monthly to employees based on value added to the</td>
<td>Profit-sharing bonuses</td>
<td>Ties payout to meeting organization’s measures</td>
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<td>organization, such as cost saving</td>
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Many terminologies were used in the past to describe performance-based cash rewards. Some studies used the term “merit pay” to refer to pay that distributes awards for superior performance as permanent increases to an individual base salary (Kellough & Selden, 1997). Other studies use other terms, such as variable pay (Stazyk, 2013), pay for performance (Weibel, Rost, & Osterloh, 2010; Perry, Engbers, & Jun, 2009; Ingraham, 1993; Houston, 2000; Kellough & Selden, 1997; Daley, 1995), performance-contingent pay (Gaerenter and Gaerenter, 1985).

The core theory of PSM suggests that employees with high levels of PSM are more likely to be motivated by intrinsic rewards, rather than by extrinsic rewards. In the context of PSM, public administration scholars’ primary concern about crowding out or diminishing employees’ PSM levels have been the reaction to performance pay (Christensen et al., 2017). The majority of the literature written on public service employees’ preference for rewards shows less attraction to extrinsic rewards compared to intrinsic rewards, such as job security, and personal fulfillment. In the public administration literature, few studies find a positive correlation between cash rewards and PSM. For example, Houston (2000) compared public and private sector employees in the
types of rewards that they value using public service motivation. He found that public employees value intrinsic rewards, such as the sense of accomplishment more than private sector employees who place greater emphasis on extrinsic rewards, such as promotions. The findings from other studies conducted by psychologists run contrary to the views expressed by many studies in the public administration literature regarding the negative effect of monetary rewards on PSM (Taylor, 2008; Houston, 2000; Andersen et al. 2012). For example, the findings of the meta-analysis research of Cameron and Pierce (1994) that investigated 96 experimental studies to compare the use of extrinsic rewards as an enforcer of intrinsic motivation show that rewards do not harm intrinsic motivation. Self-sacrifice, which is one of the basic dimensions of PSM, suggests that public servants will be motivated to serve the public even in the absence of rewards. The argument here is not to say that employees do not exhibit high levels of PSM in the absence of rewards. Rather, it is that cash rewards enforce employees’ level of PSM to serve public organizations and that PSM responds positively to cash rewards by continuing to exhibit positive behavior to serve the public. One reason for this expected shift in preference for specific elements in the reward structure can be attributed to the fact that PSM is not a stable trait. Rather, PSM is a trait that can be improved, shaped, and developed by institutions (Perry & Vandenabeele, 2008). There are other studies that show how PSM impacted the attraction to extrinsic rewards, such as Stazyk (2013) that shows a greater PSM level is associated with greater preference for performance-related pay. However, the impact of extrinsic rewards on the level of PSM in public management literature is lacking.

i. Mirco Level: Motivation Crowding Theory (IV+Mediator)

At the micro level, the crowding theory of motivation suggests that external interventions in the form of rewards can increase intrinsic motivation if properly implemented. While there are
a large number of studies offering empirical evidence to support the crowding-out effects of financial incentives on public service motivation (e.g. Christensen et al., 2017; Weibel, Rost, & Osterloh, 2010), empirical evidence on the crowding-in effect is lacking. The motivation crowding theory contends that “marginal benefits of performing are increased, and the effect of disciplining an agent is further strengthened by the crowding-in effects” (Frey & Jegen, 2001, p.593). An example of empirical evidence that tested that crowding in (or strengthening) effect of extrinsic rewards on PSM is shown in the study of Bertelli (2006). Bertelli (2006) experimentally studied the impact of financial incentives implemented by the Internal Revenue Service (IRS) on employees’ intrinsic motivation to achieve agency goals. His findings indicate that certain aspects in the IRS compensation structure do “crowd in” or strengthen intrinsic motivation. However, empirical evidence to support the crowding in effect or enhancing PSM specifically in the public sector is almost nonexistent. This is vital to address, as there are situations where certain external interventions, in the form of rewards or regulations, can “crowd in” or strengthen intrinsic motivation, the so-called “hidden gains of rewards” (Frey, 1994).

Motivation crowding theory expects that effect can occur at different levels and using different dimensions of rewards. This crowding-in effect is, therefore, expected to impact PSM positively. Frey (1994) argued that external interventions do not necessarily impair competence but have the opposite effect in that they can enhance intrinsic motivation. It can be argued, therefore, that the question of the role of the extrinsic motivation in crowding out “diminishing” effects of PSM in previous studies is overly simplistic. There is a need to answer the question of what type of extrinsic rewards crowd out or crowd in PSM. Unfortunately, there is limited empirical evidence that questions this simplistic assumption about the crowding effects of extrinsic rewards on PSM. From a methodological standpoint, the literature is fragmented on the use of one term to refer to
extrinsic rewards, as many studies use different terms, such as merit pay, extrinsic rewards, financial incentives, and cash rewards. Very few studies focused on studying closely performance-based cash rewards as the term is fairly new. Failing to specify the type of extrinsic rewards may explain the persistent findings on the crowding out or diminishing effects of extrinsic rewards on PSM. These dynamics, therefore, comprise the theoretical argument that performance-based cash rewards are expected to correlate positively with PSM in federal government settings, which leads to the following hypothesis:

**Hypothesis 1**: Performance-based cash rewards are positively associated with PSM.

**ii. The Link Between the Mediator and Outcome Variable: PSM and Performance**

One of the basic assumptions of PSM is that employees with high levels of PSM are expected to perform at a higher level than employees with lower levels of PSM. This relationship between performance and PSM has been investigated in many studies with positive findings of PSM on performance (Andersen & Serritzlew, 2012; Pandey, Wright, & Moynihan, 2008; Sangmook Kim, 2014; Miller, Robbins, & Keum, 2007; Alonso & Lewis, 2001; and Pandey et al., 2008). Very few studies show that PSM has no significant impact on employee performance (e.g. Bright, 2007). Caillier (2010) surveyed public service employees working in the New York State Department of Civil Service to examine the impact of multiple individual and organizational factors on job performance. The study has two main findings relative to aspects of PSM affecting job performance. First, job performance suffers when government workers do not have sufficient knowledge to complete their assigned duties (i.e. role ambiguity is negatively related to performance). Second, government employees will exert extra effort when they perceive that their work contributes directly to the agency’s mission (i.e. high emphasis on PSM). Surveying samples of men and women, Loon (2017) developed a scale to measure three
performance-related behavior outputs: service outcome, responsiveness, and democratic outcome to determine which of these behaviors is related to public service motivation (PSM). The results show that democratic outcome behavior is most strongly related to PSM (see Table 3).
Table 3. The relationship between PSM and performance in previous research

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<tr>
<td>Bright (2007)</td>
<td>Quantitative, non-experimental</td>
<td>Cross-sectional</td>
<td>What rating did you receive from your supervisor on your most recent performance appraisal on your current job this year?</td>
<td>Public policy making, public interest, compassion, and self-sacrifice.</td>
<td>Structural equation modeling using AMOS.</td>
<td>PSM had no significant direct impact on performance</td>
</tr>
<tr>
<td>Bøgh Andersen &amp; Serritzlew (2012)</td>
<td>Quantitative, non-experimental</td>
<td>Cross-sectional</td>
<td>Service delivery (provide more physiotherapy to disabled patient)</td>
<td>Attraction to public interest</td>
<td>OLS regression</td>
<td>PSM has positive effect on performance</td>
</tr>
<tr>
<td>Belle (2013)</td>
<td>Quantitative, experimental</td>
<td>Randomized control group experiment</td>
<td>Performance-related outcomes: persistence, output, productivity, and vigilance</td>
<td>Attraction to public interest, self-sacrifice, compassion (These items are not mentioned explicitly)</td>
<td>OLS regression</td>
<td>PSM has positive effect on performance</td>
</tr>
<tr>
<td>Kim (2014)</td>
<td>Quantitative, non-experimental</td>
<td>Cross-sectional study-Korea</td>
<td>OCB: 9-items</td>
<td>Self-sacrifice questions, attraction to public interest, compassion, and social justice</td>
<td>Hierarchical regression with stepwise</td>
<td>The study measured the impact of OCB and PSM as one of the individual-level factors affecting organizational performance. He found that PSM and OCB were strong</td>
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<td>Miller et al. (2007)</td>
<td>Quantitative, non-</td>
<td>Panel study</td>
<td>Informal and formal performance</td>
<td>Attraction for public policy making, public interest, compassion, and self-sacrifice</td>
<td>Structural equation modeling (SEM)</td>
<td>Predictors of organizational performance</td>
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<td>experimental</td>
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<td>Loon et al. (2016)</td>
<td>Quantitative, non-</td>
<td>Cross-sectional data from</td>
<td>Evaluation that employees receive from colleagues and their supervisors</td>
<td>Attraction to public policy, compassion, and commitment to the public interest</td>
<td>Generalized Least Squares random effects regression which</td>
<td>Attraction to policy-making has significantly related to all the dimensions of the informal performance</td>
</tr>
<tr>
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<td>experimental</td>
<td>2010-2012</td>
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<td>Pandey et al. (2008)</td>
<td>Quantitative, non-</td>
<td>Cross-sectional</td>
<td>Interpersonal citizenship behavior (coworker support)</td>
<td>Commitment to public interest, compassion, and self-sacrifice</td>
<td>Structural equation modeling</td>
<td>Positive effect on performance</td>
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<td>Alonso &amp; Lewis (2001)</td>
<td>Quantitative, non-</td>
<td>Cross-sectional</td>
<td>Performance ratings and grade levels</td>
<td>Attraction to policy making, compassion, self-sacrifice, commitment to the public interest, social justice, and civic duty</td>
<td>Multiple regression</td>
<td>- High-PSM employees tended to have higher grades than employees with lower levels of PSM - Employees who score high on attraction to public policy tended to have higher performance ratings</td>
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| Jin, Mcdonald, & Park (2016) | Quantitative, non-experimental   | Cross-sectional | OCB and Task performance | Commitment to public interest, compassion, and self-sacrifice. | Linear regression/Hayes’ PROCESS | - PSM is positively related to OCB of faculty  
  - PSM has no impact on the research productivity, teaching and institutional service of the faculty (indicators of task performance) |
Despite the increase in research on PSM, its indirect influence on performance was not investigated in previous studies. The following section includes an overview of the link between PSM and individual and organizational performance which provides the rationale for two hypotheses linking PSM to performance.

iii. The Relationship Between PSM and Performance at the Individual Level: Organizational Citizenship Behavior (OCB)

a. Conceptualizations of Organizational Citizenship Behavior

Organizational citizenship behavior (OCB) is defined as “individuals' behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization” (Organ, 1988, p.4). Jin, Mcdonald, and Park (2016) acknowledge that OCB is not a requirement of a role, but rather classified as discretionary behavior based on a matter of choice. In higher education settings, Jin, Mcdonald, and Park (2016) cite examples of how high levels of PSM affect faculty members’ levels of OCB, through their willingness to volunteer to create elective courses or offer courses during the summer to facilitate better student learning outcomes. Overall, organizational citizenship behaviors vary depending on the context but mostly share the classification that they are done voluntarily by the employee.

The constructs of organizational citizenship behavior, extra-role behavior, and contextual performance are similar in meaning and conceptualization. These constructs are used in studies to indicate the value of individual behavior in enhancing organizational performance. For example, some studies show that when employees exhibit a high degree of contextual performance (e.g. helping others and their organizations), they can get the work done at the least cost for organizations (Goodman & Svyantek, 1999). Others show that extra-role activities are
not part of formal role requirements but are viewed as promoting organizational effectiveness and improving its overall image (Speier & Frese, 1997). Lee and Allen (2002) posit that OCB is useful in facilitating organizational functioning. In a similar vein, Katz (1964) suggested that OCB includes innovative and spontaneous behaviors necessary for the organizational operations. This classification includes the following dimensions: protecting the organization, offering constructive ideas, and maintaining a positive attitude toward the organization. Other examples of OCB include showing respect to authority, involving oneself in organizational activities, working beyond required job tasks, and avoiding conflicts (Kim, 2014; Aguinis, 2009).

By comparison, Goodman and Svyantek (1999) demonstrate the distinction between two types of performance-related behaviors: contextual performance (extra-role) and task performance (in-role). In their study, contextual performance refers to the extra role behaviors that are not required by the job, while task-based job performance is defined as the in-role activities that an employee performs in exchange for pay. One way of measuring task performance viewed in the literature is using job-related knowledge and skills to measure task-related performance because KSAs covary with task proficiency (Fernandez & Moldogaziev, 2011).

b. Dimensions of Organizational Citizenship Behavior

There is a lack of consensus about the dimensionality of the organizational citizenship behavior construct among management scholars. For example, Podsakoff et al. (2000) discuss the scholarly efforts conducted using different OCB dimensions. Their study shows seven types of OCB related behaviors commonly used in the literature: a) helping behavior, b) sportsmanship, c) organizational loyalty, d) organizational compliance, e) individual initiative, f) civic virtue, and g) self-development. Williams and Anderson (1991) distinguish between two
distinct types of OCB: citizenship behaviors that benefit individuals (OCBI) and citizenship behaviors that benefit the organization (OCBO). For the pair, OCBI directed toward the individual reflects the dimension of altruism, such as helping others who have been absent. Whereas OCBO reflects the dimension of generalized compliance in the organizations, such as adherence to informal rules imposed by organization leaders and providing notice when an employee is unable to come to work.

**ii. PSM and Organizational Citizenship Behavior**

The core theory of public service motivation suggests that public service employees with high levels of PSM are expected to perform at higher levels than employees with lower levels of PSM (Perry & Hondeghem, 2008; Perry, Mesch & Paarlberg, 2006; Alonso & Lewis, 2001). Self-sacrifice, which is one of the basic dimensions of PSM, suggests that people with high levels of PSM are expected to exert more efforts in the job for aspects they see as valuable in the public organizations. Compassion, which is another dimension of PSM, emphasized an individual’s commitment to being involved in accomplishing the needs and desires of others (Kim & Vandenabeele, 2010). In the case of employees in federal agencies, examples of OCBs include providing innovative ideas to improve the work even in the absence of rewards. Based on the PSM dimensions, a positive association between PSM and OCB is expected, only when the work context (i.e. environment, job characteristics) provides means to contribute to the society (Leisink & Steijn, 2009). These dynamics, therefore, comprise the theoretical argument that PSM is expected to correlate positively with organizational citizenship behavior in federal government settings, leading to the following hypothesis:

**Hypothesis 2a**: PSM is associated positively with OCB of the federal government employee
iv. **PSM and Performance at the Organizational Level: Work Unit Performance**

If performance in the public sector is indeed multidimensional as suggested in previous studies (e.g., Brewer & Selden, 2000), it could be argued that PSM affects different dimensions of public performance at different levels. Organizational performance is conceptualized as the product of an individual’s contribution to achieving the organization’s objectives, and stresses that measuring organizational performance is more important than measuring individual performance in public institutions as the service is the product of the work of the group (Loon et al., 2016). In this study, organizational performance is operationalized through the accomplishments (i.e., products or services) of the work units. The United States Office of Personnel Management (OPM) (2017) defines work unit as a small group of employees or teams who are working to achieve a common goal, generally between about 5 and 20 people and is considered the smallest group in the organization.

The core theory of PSM suggests that PSM contributes to higher organizational performance through higher individual performance (Perry & Wise, 1990). Loon (2016) rightly asserts that work units with employees with high levels of PSM are capable of providing better services and output because their focus is on the common interest of the public organizations. Other PSM studies emphasize that organizations which can retain and attract employees with higher levels of PSM are expected to be high-performing organizations (Bright, 2007; Leisink & Steijn, 2009; Brewer & Selden, 2000). There are several studies that show a positive correlation between PSM and work-unit performance (Loon, 2016; Fernandez & Moldogaziev, 2013; Fernandez & Moldogaziev, 2011). Therefore, the argument is that high levels of PSM contribute to achieving high work-unit performance. Based on previous empirical studies and the assumptions of the PSM theory, and the theoretical argument that PSM is expected to correlate
positively with work unit performance in federal government settings, it seems likely that PSM is associated positively with work unit performance.

**Hypothesis 2b**: PSM is associated positively with work-unit performance

v. **The Link Between the Independent and Outcome Variables: Performance-Based Cash Rewards and Performance**

**a.) Macro Level: Public Choice Theory**

At the macro level and stemming from an economic view, public choice theorists argue that monetary rewards improve performance if they are properly implemented. Public choice theory is defined as an “economic study of non-market decision-making, or simply the application of economics to political science” (Mueller, 2003, p.1). Public choice theory applies economic market principles to the operations of public services and has become increasingly influential on how the government should function. It represents mistrust of governmental power and encourages fragmenting this power through designing systems to restrict the abuse of authority (Huff, 2007). In *The Intellectual Crisis in the American Public Administration*, Ostrom (1974) asserts that public agencies should design systems that are responsive to the psychological needs of the individuals. One of the basic assumptions of public choice theory lies in the belief that performance can be improved by allocating economic incentives. Powerful was the public choice theorists’ call to abandon the use of rewards that are based on seniority and encourage the adoption of merit pay for rewarding individual performance (Self, 1993). This shift from government model to market model through allocating performance incentives for the purpose of increasing efficiency of service delivery moves away from focusing merely on the organizational bureaucratic structure to the needs and preferences of the individuals to improve their status in organizations.
Many of the public choice theorists start with analyzing the individual as an important unit of analysis (Ostrom 1974). Since the individual becomes the main unit of analysis, the focus of public choice theorists analyzes how individuals behave in public organizations. In his work, *Administrative Behavior*, Simon (1947) attempts to build a new administrative and economic theory that applies to public organizations by observing the difference between facts and individual values. Central to his argument about human behavior is the fact that administrative actions and decisions follow a rational, linear, and structured process; however, it adds the condition that people act by limited information. Knowledge in this sense is valuable in two ways. First, it gives individuals the ability to predict the consequences of an action. Second, it enhances the chances of making efficient decisions through higher levels of specialization. The ability of a decision maker to tailor these forces to work side-by-side in the decision-making process is what Simon (1947) believed can create efficient decisions. Efficiency means being equipped with the tools to evaluate all possible alternatives within the available resources, to anticipate the consequences, use time wisely, and to invest knowledge and organizational resources in creating optimal decisions. Efficiency in management choices means using the least amount of resources to achieve a higher level of preferred outcomes. Thus, Simon’s public choice theory becomes very powerful in explaining the rationale behind policymakers’ goals to maximize the efficiency of government operations through a wise and efficient use of resources.

So, how can efficiency be achieved within government management practices? At the federal level, the power of the public choice theory comes from the influence of the market model on the operations of government. Peter Self (1993) in his book *Government by the Market* examined the roots of this new shift, suggesting that the new public choice ideology assumes government’s operations can be made efficient by adopting a market-based view and the
management principles of market firms. While Self (1993) argued that this new ideology could sometimes be successful, he acknowledged that there is not enough rational evidence to prove its success, as this ideology is largely considered a politically-motivated choice. Among the efforts to restructure government for the purpose of improving efficiency entails the tendency to increase competition through promoting financial incentives to reward individual efforts (Self, 1993, p.62):

“Perhaps most closely associated with HRM practices, these changes include less use of seniority rules, a wider spread of pay differential, and merit or performance pay for individual achievement. Implementing methods to treat performance pay as a collective award for teamwork versus individual effort, and relating rewards for bureaucrats to a competitive performance in satisfying consumers or increasing cost-effectiveness”.

b) Application of the Public Choice Theory in the Link between Performance-Based Cash Rewards and Performance

In response to the calls of public choice theorists, one of the government’s major goals was to change the old performance management system of the public sector into an objective performance management system that is based on merit pay, bonuses, and incentives (Daley, 1990). In order to transform the civil service into a state-of-the-art performance management system, the U.S. Congress gave agencies discretion to design their own objective-based system to provide continuous appraisals of job performance for employees and use the results of performance appraisal to make many employment decisions regarding promoting, rewarding, and removing employees (U.S. Congress, 1978).

Proponents of improving performance based on allocating economic incentives argue that rewarding individual efforts is an essential element of an effective tool to improve the
government performance. One step towards achieving this objective is through decentralization.

According to Smoke (2015), decentralization is defined as “the assignment of public functions to subnational governments along with structures, systems, resources, and processes that support implementing these functions to meet certain public sector goals” (p.98). Frederick Mosher (1982) in *Democracy in the Public Service* argued that human resource management systems “should be decentralized and delegated to bring into more immediate relationship with the middle and lower managers they served” (p. 86). By decentralizing the human resources function and delegating it to each state agency, the states of Georgia, Texas, and Florida are among the states that have enacted Mosher’s vision. In their book *Reinventing Government*, Osborne and Gaebler (1992) introduced the concept of “entrepreneurial government” which relies on the decentralization of government’s tasks and distributing them in the hands of customers, communities, and nongovernmental agencies. For the pair, there are four advantages of decentralization:

- Decentralized institutions are more flexible than the centralized system; as they can respond quickly to customers’ needs.
- Decentralized organizations are more effective than centralized organizations
- Decentralized organizations are more innovative than centralized organizations
- Decentralized organizations have better employee morale and commitment, and therefore more productive.

Not only decentralization, but the influence of public choice theory on public service reformers and elected public officials can be seen in their preference towards limiting the role of government, through “contracting out, privatization of public services and the evaluation of performance based on an assessment of outcomes” (Heady, 2001, p. 4).

c) Micro Level: Expectancy Theory
At the micro level, the expectancy theory explains that people will be motivated to perform better when their efforts result in desirable outcomes (Denhardt, Denhardt, & Aristigueta, 2009). The expectancy theory of motivation explains the process of how and why people are motivated towards achieving goals. It suggests that if they believe that there is a correlation between their efforts and performance, they will perform well. According to Vroom (1964), there are three important components for motivation to occur: valence (the value of the reward), instrumentality (the possibility that the desired performance will be rewarded), and expectancy (the possibility that effort will result in the desired performance). The strength of this theory relative to this study is twofold. First, it depicts how motivation can be achieved through the link between three motivational dimensions, namely expectancy, instrumentality, and valence. Second, the theory suggests that if instrumentality or valence conditions are not achieved, performance-based cash rewards will not likely improve performance.

Under the expectancy theory, performance-based cash rewards can improve employees’ motivation only when three conditions are met. First, employees see a clear link between their efforts and performance (expectancy). Second, employees see a clear link between their efforts and the type of rewards they receive (instrumentality). And third, the reward is valued by employees (valence). If performance-based cash rewards are not commensurate with performance, instrumentality will consequently suffer, and performance will be lower. Based on the relevant theoretical foundations and empirical evidence, the following hypotheses are established:

**Hypothesis 3a**: Performance-based cash rewards are positively associated with employees’ OCB.
**Hypothesis 3b:** Performance-based cash rewards are positively associated with work-unit performance.

**Hypothesis 4a:** The relationship between performance-based cash rewards and OCB is mediated by PSM.

**Hypothesis 4b:** The relationship between performance-based cash rewards and work-unit performance is mediated by PSM.

**Gaps in the Literature**

Considering the existing research examined in the literature around dimensions of performance with respect to the study variables, there are some potential gaps. First, few studies have examined performance-based cash rewards as a precursor to performance. Moreover, those studies that have examined them have used longitudinal data (Nyberg, Pieper, & Trevor, 2016). Second, the majority of scholarship has focused on reviewing why and how the implementation of pay for performance was dysfunctional rather than functional. Few studies attempt to uncover the correlation between performance-based cash rewards as a single factor on employee performance. There is no study that provides such distinction when studying PSM or performance-based cash rewards’ influence on federal employees. Third, of the few studies that examined the correlation between performance-based cash rewards and performance, the majority are outdated (e.g. Perry, Petrakis, & Miller, 1989). Fourth, most of the studies that examined the impact of pay for performance have studied state employees’ (Kellough & Nigro, 2002) and used the pay for performance system in general (i.e. with no specific emphasis on cash rewards). Fifth, of the few studies that examined the correlation between PSM and job performance, very few focused on studying federal employees. Those that are found in the literature are also outdated, such as the study of Alonso and Lewis (2001) that used a cross-
section of the federal employee survey of 1991. Sixth, few studies have adopted a mediation model to examine the variables used in this study. Seventh, there is no study that used the combination of theories that will be applied in this study. Eighth, a large number of studies took a holistic view into looking at pay for performance system in general. That is, most of them did not specify whether they are focusing on performance-based cash rewards, bonus plans, or group sharing. And finally, there is a lack of consensus on using a specific term to refer to cash rewards. As a result, answering the following research questions is paramount.

**Research Question 1:** Does public service motivation (PSM) mediate the relationship between performance-based cash rewards and organizational citizenship behavior?

**Research Question 2:** Does public service motivation (PSM) mediate the relationship between performance-based cash rewards and work-unit performance?
Chapter Three: Research Design

This chapter is devoted to discussing the research design of the study. The first part of this section starts by restating the research questions and hypotheses, followed by introducing the research design chosen to execute the study, the time dimension, sample and procedure, and measures used to operationalize the dependent, mediator, control, and outcome variables. The following chapter discusses how this researcher intends to analyze the data. The last chapter examines the importance of this study for public administration, its limitations, threats to validity and reliability, and recommendations for future research.

1. Research Questions and Hypotheses

The current study aims at answering the following research questions:

**Research Question 1:** Does public service motivation (PSM) mediate the relationship between performance-based cash rewards and organizational citizenship behavior?

**Research Question 2:** Does public service motivation (PSM) mediate the relationship between performance-based cash rewards and work-unit performance?

Based on the review of literature in the previous chapter, the following research hypotheses are created:

**Hypothesis 1:** Performance-based cash rewards are positively associated with PSM.

**Hypothesis 2a:** PSM is associated positively with OCB of the federal government employee

**Hypothesis 2b:** PSM is associated positively with work-unit performance.

**Hypothesis 3a:** Performance-based cash rewards are positively associated with employees’ OCB.

**Hypothesis 3b:** Performance-based cash rewards are positively associated with work-unit performance.
**Hypothesis 4a:** The relationship between performance-based cash rewards and OCB is mediated by PSM.

**Hypothesis 4b:** The relationship between performance-based cash rewards and work-unit performance is mediated by PSM.

2. **Research Design**

The chosen design to answer the research questions above is deductive and quantitative in nature and utilizes non-experimental, cross-sectional, and correlational design. The study is characterized as non-experimental correlational design because there is no intervention used in examining the impact of the independent variables on the sample chosen (Shadish, Cook & Campbell, 2002). The research design is appropriate based on the existing literature that has adopted similar methodology (Crowell & Guy, 2010; Bowman et al., 2003; Demarco & Nigro, 1983; Daley, 1990).

3. **Time Dimension**

The study uses a cross-sectional design which means the dependent variable is measured only once and is chosen because it is the most prevalent in the literature reviewed. Measuring the outcome variables, a subsequent time will be of no value to the study’s objectives.

4. **Mediation Model**

It is vital to note that while mediation is a causal technique in nature, there is no statistical technique that can prove causality (Hayes & Preacher, 2014). Causality is established when appropriate research design is applied, such as experimental designs. In this study, mediation is applied to aid in answering whether an association between variables exists, and therefore does not prove causality. Using a single mediation model is useful in this case to provide preliminary evidence to answer whether the proposed causal model is plausible (Warner,
5. Method: Sample and Procedures

This study uses the U.S. Office of Personnel Management’s (OPM) (2016a) Federal Employee Viewpoint Survey (FEVS). The Federal Employee Viewpoint Survey is a large survey that measures federal employees’ perceptions of various conditions that characterize their agencies and their work experiences. This survey was administered first in 2002 and repeated every two years until 2010 when it was administered every year. The 2016 FEVS was administered electronically and sent to employees via email. To encourage a higher response rate, OPM uses the technique of sending multiple follow-up emails to all employees included in the sample (U.S. Office of Personnel Management, 2016a). The total participants in 2016 were 407,789 employees who completed the survey, and the response rate was 45.8%. In total, 80 agencies participated in the survey, consisting of 37 departments/large agencies and 43 small/independent agencies (U.S. Office of Personnel Management, 2016a).

In this study, individual federal government employees are the target population. The unit of analysis is the federal employee who participated in the 2016 survey. And access to employees’ responses in all 80 agencies was provided by the Office of Personnel Management (OPM).

6. Measures

This section includes a discussion of how the variables of the study are measured using the Federal Employment Viewpoint Survey (FEVS). These variables are measured as follows:

Mediator Variable: Public Service Motivation (PSM)

Perry (1996) was the first scholar to develop a scale to measure the level of motivation of public servants. The scale consisted of six dimensions: attraction to public policy making,
commitment to the public interest, civic duty, social justice, self-sacrifice, and compassion. The majority of studies that investigated PSM used at least three dimensions, while some others have developed one or two constructs (Ritz, Brewer & Neumann, 2016). Other studies add one additional construct, such as adding “regard for the public interest” (Brewer and Selden, 2000).

Due to the shortage in the FEVS data, it is not possible to measure all PSM dimensions in this model as indicated in previous studies (e.g. Weaver, 2015). This study uses an aggregate of three items from Perry’s (1996) original scale to estimate the presence of PSM. This research proposes using an index of three questions which resulted in a Cronbach’s alpha of 0.76. Public service motivation is operationalized as the desire to serve the public interest as in the study of Perry (1996) when he used this item “meaningful public service is very important to me”. A similar item was also used by Carpenter et al. (2012), Kim (2014), and Weaver (2015). Also, these three items were used by Alanazi (in press) to measure employees’ level of PSM in federal agencies. Based on these studies, this dimension is measured using three survey items (see Table 4). Responses to the three items that represents the PSM construct will be measured on a Likert-type scale ranging from 1 to 5, from ‘strongly disagree’ to “strongly agree”.

**Independent Variable: Perceived Perceptions of Performance-Based Cash Rewards**

As defined in a previous section, performance-based cash rewards are “lump-sum cash payment that requires the most recent rating of record as the sole justification for the reward” (U.S. Office of Personnel Management, 2016). Measuring federal employees’ perceived perceptions of performance-based cash rewards was inspired by previous scales used by Park and Rainey (2007) Fernandez and Moldogaziev (2011) and Selden and Brewer (2000). The Cronbach’s for the two items is α = .77. Responses will be measured on a Likert-type scale ranging from 1 to 5, from ‘strongly disagree’ to “strongly agree”. One observed limitation of this
construct is that it comes through self-reported data (see Table 4).

**Dependent Variable 1: Organizational Citizenship Behavior (OCB)**

Organizational Citizenship Behavior (OCB) is defined as the extra-role activities that are not part of formal role requirements but are viewed as promoting organizational effectiveness and improve its overall image (Speier & Frese, 1997; Goodman & Svyantek, 1999). OCB was measured using two items that were inspired by previous studies (Alanazi, 2020; Williams & Anderson, 1991, and Lee & Allen, 2002; Katz, 1964; Kim, 2014; Moon, 2016; Ko & Smith-Walter, 2013). Two items reflecting two dimensions of organizational citizenship behavior that are beneficial to the organization are used—individual initiative (generating innovative ideas for improving performance), and persistence with enthusiasm and extra effort to complete tasks successfully (Borman & Mowday, 1997, p.103). These two items were used by Alanazi (2020) to measure employees’ level of OCB in federal agencies (see Table 4).

Those OCBO items directed towards the organization are selected because they reflect behaviors not required by the job and are beneficial to the organization, such as innovative behaviors that are beneficial. OCB, thus, is measured by selecting items that represent possessing behaviors of a good citizen, defined as “a form of conscientiousness that does not provide immediate aid to any one specific person, but rather is indirectly helpful to others involved in the system” (Smith, Organ, Near, & Guion, 1983, p.657). One limitation of this measure is that it comes through self-reported data. The Cronbach’s for the two items is \( \alpha = .77 \). Responses are measured on a Likert-type scale ranging from 1 to 5, from ‘strongly disagree’ to “strongly agree”.

**Dependent Variable 2: Work-Unit Performance**

There is a common concern among scholars of public administration about how to better
provide an objective measure of performance dimensions. For example, Fernandez and Moldogaziev (2011) in their study use perceptual measures of performance and emphasize that “it is fair to conclude that although not interchangeable, perceptual measures of performance are at least moderately correlated with objective ones and can serve as a solid proxy for them” (p. 28). The choice of this item measuring work-unit performance was inspired by Fernandez and Moldogaziev (2013), Fernandez and Moldogaziev (2011) and Yang (2011) and therefore one item was chosen (see Table 4). Measuring organizational performance using individual responses towards their perceptions of work-unit performance is common in the literature. For example, Park and Kim (2017) posit that “expectancy in organizational performance can refer to an employee’s belief about the total effect or outputs of effort with professional identity” (p.80). They further assert that the identity of public servants is related directly to the work unit performance as one facet of organizational performance.

This outcome variable is based on asking participants questions about the ratings of the overall quality done by the work-unit. This item is measured using a Likert-type scale ranging from 1 to 5, from “very poor” to “very good”. One observed limitation of this construct is that it comes through self-reported data.

**Control Variables**

Gender bias was an issue in the distribution of pay increases, where men received higher pay than women (Daley, 1995) and where gender negatively affected pay for performance (Weibel et al., 2010). Therefore, gender is included as a control variable in this study (Binary variable, (1=Male, 2=Female). Supervisor biases tended to have a negative impact on performance (Wright & Adam, 2010) and were one of the factors that affected the successful implementation of pay for performance (Perry et al., 2009). Therefore, it is included as a control
variable in this study. This item is measured using a Likert-type scale ranging from 1 to 5, from “1=very poor” to “5=very good”. Working conditions were shown to have a significant relationship with performance, and therefore will be controlled in this study. This question is measured using a Likert-type scale ranging from 1 to 5, from ‘strongly disagree’ to “strongly agree”. Also, minority status was included because of its negative impact on perceived performance appraisals in previous studies (e.g., Harrington & Lee, 2015). Age and supervisor status (position) were also used as control variables and both are measured using dichotomous variables (see Table 4).

Table 4. Questionnaire Items and Statistics

<table>
<thead>
<tr>
<th>DV1: OCB</th>
<th>(Source: Adapted from: (Kim, 2014; Katz, 1964; Ko &amp; Smith-Walter, 2013; Borman &amp; Mowday, 1997) (Cronbach’s α = .77)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimension/Direction of Behavior</strong></td>
<td></td>
</tr>
<tr>
<td>Innovative Ideas/individual initiative</td>
<td>I am constantly looking for ways to do my job better</td>
</tr>
<tr>
<td>(Katz, 1964; Moon, 2016; Alanazi, in press)</td>
<td>4.38 .72</td>
</tr>
<tr>
<td>Extra effort to complete tasks successfully</td>
<td>When needed I am willing to put in the extra effort to get a job done</td>
</tr>
<tr>
<td>Borman &amp; Mowday, 1997; Alanazi, in press</td>
<td>4.59 .65</td>
</tr>
<tr>
<td><strong>DV2: Work Unit Performance</strong> Source: Adapted from: (Fernandez &amp; Moldogaziev, 2013; Fernandez &amp; Moldogaziev, 2011).</td>
<td>(Measured using the following ordinal survey item: (1 = very poor to 5 = very good)</td>
</tr>
<tr>
<td><strong>Variable</strong></td>
<td><strong>Mean</strong></td>
</tr>
<tr>
<td>How would you rate the overall</td>
<td>4.25</td>
</tr>
</tbody>
</table>
IV: Performance-Based Cash Rewards

(Source: Adapted from Park & Rainey, 2007; Fernandez & Moldogaziev, 2011, and Selden & Drewer; Cho & Perry, 2012. Cronbach’s $\alpha = .77$)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotions in my work unit are based on merit.</td>
<td>3.01</td>
<td>1.265</td>
</tr>
<tr>
<td>Pay raises depend on how well employees perform their jobs.</td>
<td>2.63</td>
<td>1.205</td>
</tr>
</tbody>
</table>

Mediator: Public Service Motivation (PSM)

(Source: Adapted from Perry’s (1996) original scale, Cronbach’s $\alpha = .76$)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know how my work relates to the agency's goals and priorities.</td>
<td>4.09</td>
<td>.91</td>
</tr>
<tr>
<td>The work I do is important.</td>
<td>4.35</td>
<td>.80</td>
</tr>
<tr>
<td>I like the kind of work I do.</td>
<td>4.18</td>
<td>.89</td>
</tr>
</tbody>
</table>

Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1.46</td>
<td>.49</td>
</tr>
<tr>
<td>Minority</td>
<td>1.59</td>
<td>.49</td>
</tr>
<tr>
<td>Age</td>
<td>.78</td>
<td>.411</td>
</tr>
</tbody>
</table>
The following section includes a discussion of the study’s analysis plan, followed by the plan to assess the findings of this study.

7. Analysis Plan

The data will be analyzed using IBM SPSS Statistics, and regression analysis will be conducted using the SPSS macro developed by Hayes (2013) known as PROCESS. In this mediation model, the influence of the predictor (perceived perceptions of performance-based cash rewards) on the outcome variables (OCB and work-unit performance) will be tested directly and indirectly through the mediator variable (PSM). This analysis will be conducted in the following six steps.

Step 1. Preliminary testing: correlations, removal of missing data, and outliers.

Step 2. Using regression analysis, the first path includes testing whether there is a relationship between performance-based cash rewards and performance (path c). The relationship between the independent and dependent variable will be tested to see if it decreases (path c) when adding
the third variable (i.e., mediator). The c coefficient estimates the strength of the direct (also
called partial) effect of perceived perceptions of performance-based cash rewards on the outcome
variables, that is, any effect of perceived perceptions of performance-based cash rewards on
employees’ level of OCB or work-unit performance that is not mediated by PSM. This step is
sometimes omitted in the analysis of mediation models. However, it gives the reader more
information regarding the strength of the association between the dependent variables and
independent variable after controlling for the mediator’s effect (Warner, 2013).

Step 3. The third step includes testing whether there is a relationship between perceived
perceptions of performance-based cash rewards and PSM (path a). The regression analysis is
useful as it provides the path coefficients and alpha level, which aid in deciding whether the
relationship is significant.

Step 4. The fourth step includes testing whether there is a relationship between PSM and OCB
and work-unit performance (path b). The regression analysis is useful as it provides the path
coefficients and alpha level which help to decide whether the relationship is significant.

Step 5. Bootstrapping will be applied to test the indirect relationship (a*b). This method of
testing the indirect effect is superior to the other method because it has better control over Type I
errors. The path a*b estimates the strength of the mediated or indirect effect of perceptions of
performance-based cash rewards on the outcome variables, that is, how much of the increase in
performance is due to PSM. For example, if there is a significant path (a*b is different from
zero) and path c indicated no statistically significant results (or only a small significance), the
possible inference is that the effect of X (IV) on Y (DV) is entirely mediated by the mediator
(PSM).

Step 6. The total effect of the mediation model is calculated as the sum of the direct effect (c)
and indirect (mediated) effect (a*b):

\[ \text{Total Effect} = c + ab. \]

Step 7. The effect size of the mediation model is calculated using \textit{Percent Mediation} or the ratio of the indirect effect to the direct effect. Percent mediation is calculated as follows as per the recommendation of Preacher and Kelley (2011):

\[
R_{mc} = \frac{ab}{c'} = 8.
\]

8. Assessing the Findings

To ensure accuracy of the study’s findings, this research will follow different steps. First, the reliability of the quantitative findings will be demonstrated through a discussion with the dissertation committee members to help ensure the accuracy of the study’s analysis and findings. Second, the reliability of the findings will be explained by the amount of the variance explained within the estimated models (i.e., the $R^2$ value, the Pseudo $R^2$ value, etc.) and by the Cronbach’s Alpha values for the study’s measures. Third, the findings will be analyzed in terms of the effect size. This is because a large coefficient value and low p-value should speak to strength and confidence of findings. Fourth, the mediation effect will be measured using bootstrapping. That is, if the bootstrapping Confidence Interval (CI) does not include zero, this researcher can conclude that a statistically significant mediation occurs. The size of the mediation effect will be measured to stand at the strength of the mediation model. The indirect or mediation effect will be measured through the mediator (effect $a \times b$) and the direct effect (the effect after accounting for the mediator) will be illustrated using effect $c'$ (c-primed).

If the results of this model are statistically significant, it will provide support to the motivation crowding theory in federal agencies. That is, it will demonstrate that the value of one component of the pay for performance (performance-based cash rewards) needs to be
reconsidered and reemphasized when implemented in public organizations; as cash rewards “crowd in” public service motivation. Additionally, the results of this study will direct the attention to the value of PSM for practitioners and its influence on enhancing certain work-related outcomes, such as performance. Also, public managers need to know whether employees with high PSM levels will perform higher than employees with lower levels of PSM. Similarly, they will be interested to know if incentives in the form of cash rewards crowd in (enhance) or diminish PSM as crowding theory suggests, and consequently affect employees’ performance. As such, this study demonstrates that both researchers and practitioners alike should turn their efforts towards understanding factors that affect the implementation of pay for performance in the public sector organizations and the impact of cash rewards on affecting various organizational behaviors. They need to know not how or when pay for performance works, but whether it works in public organizations.

If the results of this model are determined to be not significant, an explanation to the measurement validity can be explored. Some limitations do exist with constructs or dimension of a construct measuring performance which are not comprehensive in nature as indicated by previous studies (e.g. Fernandez et al., 2015). Also, there are few studies that used these constructs from the FEVS dataset to measure performance-based cash rewards from the FEVS and therefore more validation of the use of these measures across multiple studies is needed. In addition, this study uses PSM as one construct, which means future studies that measure subdimensions of PSM may generate different findings.

Summary

The purpose of this quantitative correlational study is to examine whether perceptions towards performance-based cash rewards in federal agencies influence employees’
organizational citizenship behavior and work unit performance, either directly or indirectly through public service motivation. To answer the research questions, this researcher uses cross-sectional data from the 2016 Federal Employee Viewpoint Survey—the largest publicly available data covering various conditions that characterize federal agencies and employees work experiences.

Also, this chapter discusses the research design of the study, presents a review of the study’s research questions and hypotheses, followed by an introduction of the research design chosen to execute the study. Specifically, the research model includes organizational citizenship behavior as a dependent variable, PSM as a mediator, and perceptions towards performance-based cash rewards as an independent variable. It also includes work environmental conditions, supervisor bias and supervisor status and demographic variables as control variables. This study also uses survey questions from the 2016 Federal Employment Viewpoint Survey.

These introductory sections are followed by the time dimension, sample size, and measures used to operationalize the dependent variable, mediator, control, and outcome variables. The following chapter provides the data analysis procedure, a discussion of the design, methodological details, statistical analysis results, and research findings. The last chapter discusses the study’s implications for public administration, limitations and threats to validity and reliability, and recommendations of this researcher for future research and for the federal government and human resources practice in public organizations.
Chapter Four: Data Analysis and Findings

This part of the research provides a discussion of the results, methodological details and findings, and statistical analysis approach. To do this, this chapter is divided into four sections. The first section reviews the research questions and hypotheses, and discusses the descriptive statistics, correlations among variables, and the results of the normality tests. The second section discusses the common method bias as an issue when collecting data via a self-administered survey. The third section discusses the analysis plan and procedure conducted to test the mediating effects using Hayes’ PROCESS macro and the magnitude of the effect size of the mediated effect. The last section provides an overview of the main findings of this study and a summary of the results of hypotheses testing.

The last chapter reviews the key findings, implications for public policy and administration, and a discussion of the study’s limitations and this researcher’s thoughts and recommendations for future research.

1. Results

This section starts with a review of the research questions and hypotheses of this study. Next, a discussion of the descriptive statistics of the study variables, tests for normality, correlations, and the characteristics of the study’s respondents is presented. This section is followed by a discussion of the common method bias and concludes with the results of the hypotheses testing.

Review of Research Question, Variables and Hypotheses

Before discussing the results of the hypotheses testing, this section starts with a review of the research questions and hypotheses mentioned in previous chapters.

Research Questions:
RQ1: Does public service motivation mediate the relationship between performance-based cash rewards and OCB?

RQ2. Does public service motivation mediate the relationship between performance-based cash rewards and work-unit performance?

Review of Hypotheses:

**Hypothesis 1**: Performance-based cash rewards are positively associated with PSM.

**Hypothesis 2a**: PSM is associated positively with OCB of the federal government employee

**Hypothesis 2b**: PSM is associated positively with work-unit performance

**Hypothesis 3a**: Performance-based cash rewards are positively associated with employees’ OCB.

**Hypothesis 3b**: Performance-based cash rewards are positively associated with work-unit performance.

**Hypothesis 4a**: The relationship between performance-based cash rewards and OCB is mediated by PSM.

**Hypothesis 4b**: The relationship between performance-based cash rewards and work-unit performance is mediated by PSM.

2. Descriptive Statistics

The total number of participants in 2016 who completed the FEVS survey was 407,789 out of a total number of 889,590 employees who received the survey, for a response rate of 45.8% (OPM, 2016). Of that number, 244,777 cases are included in the final empirical analysis, with some observations dropped due to missing data on the dependent, independent and/or control variables. Table 5 presents descriptive statistics for the study variables. Those comprised
of multiple items incorporated by using a mean value, with a minimum value of 1 and a
maximum value of 5 (based on a five-point Likert-type scale).

When looking at the descriptive statistics in Table 5, and considering mean values of the
variables, respondents tended to report relatively high levels of PSM (4.30), followed by work-
unit performance (4.01) and OCB (3.81). In addition, supervisor bias and working conditions
show mean values above the midpoint of three. Also, the mean scores indicate that there is low
agreement that performance-based cash rewards, in the form of pay raise and promotions, are
based on actual performance (2.7) which represents the lowest mean value compared to other
variables included in this model.

Table 5. Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Concepts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBCR</td>
<td>265,045</td>
<td>1</td>
<td>5</td>
<td>2.78</td>
<td>1.11</td>
</tr>
<tr>
<td>OCB</td>
<td>288,836</td>
<td>1</td>
<td>5</td>
<td>3.81</td>
<td>.83</td>
</tr>
<tr>
<td>PSM</td>
<td>293,020</td>
<td>1</td>
<td>5</td>
<td>4.30</td>
<td>.62</td>
</tr>
<tr>
<td>WUP</td>
<td>300,057</td>
<td>1</td>
<td>5</td>
<td>4.01</td>
<td>.81</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>303,439</td>
<td>1</td>
<td>2</td>
<td>1.46</td>
<td>.49</td>
</tr>
<tr>
<td>Minority</td>
<td>303,439</td>
<td>1</td>
<td>2</td>
<td>1.59</td>
<td>.49</td>
</tr>
<tr>
<td>Supervisor Position</td>
<td>289,309</td>
<td>0</td>
<td>1</td>
<td>.21</td>
<td>.40</td>
</tr>
<tr>
<td>Age</td>
<td>296,959</td>
<td>0</td>
<td>1</td>
<td>.78</td>
<td>.411</td>
</tr>
<tr>
<td>Supervisor Bias</td>
<td>298,833</td>
<td>1</td>
<td>5</td>
<td>3.08</td>
<td>1.13</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>301,098</td>
<td>1</td>
<td>5</td>
<td>3.71</td>
<td>1.15</td>
</tr>
<tr>
<td><strong>Valid N (listwise)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>244,777</td>
</tr>
</tbody>
</table>

Note. PBCR=Performance-based cash rewards; OCB=Organizational citizenship behavior;
WUP=Work-unit performance; PSM=Public Service Motivation; S.D.=Standard Deviation
3. Characteristics of the Study’s Respondents

Age. The frequency distribution of respondents based on age shows that the majority of respondents are 40 years and older (76.8%) followed by respondents who are under 40 years (21.1%). A slight number of respondents did not report their age, comprising a total number of 6,480 or 2% as shown in Table 6.

Table 6. Distribution of Respondent Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 40 Years</td>
<td>63889</td>
<td>21.1</td>
</tr>
<tr>
<td>40 Years and Above</td>
<td>233070</td>
<td>76.8</td>
</tr>
<tr>
<td>Non-respondents</td>
<td>6480</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Gender. The frequency distribution of respondents based on their gender shows that the majority of respondents are males (53.8%) compared to 46% female respondents as shown in Table 7.

Table 7. Distribution of Respondents’ Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>163,337</td>
<td>53.8</td>
</tr>
<tr>
<td>Female</td>
<td>140,102</td>
<td>46.2</td>
</tr>
</tbody>
</table>

Minority Status. The frequency distribution of respondents based on their minority status shows that the majority of respondents (178,564) are from a non-minority status, comprising 58% of the total number of respondents, compared to 41% (124,875) of respondents from minority status. “Non-minority” status represents respondents belonging to all racial groups and compose those who identify themselves as both White and Non-Hispanic, while all other combinations of
responses are represented as “Minority”. See Table 8.

**Table 8. Distribution of Respondents Based on Minority Status**

<table>
<thead>
<tr>
<th>Minority</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minority</td>
<td>124,875</td>
<td>41.2</td>
</tr>
<tr>
<td>Non-minority</td>
<td>178,564</td>
<td>58.8</td>
</tr>
</tbody>
</table>

**Supervisor Status.** The frequency distribution of respondents based on their supervisory status show that 75% of respondents (228,104) are non-supervisors, compared to 20% (61,205) of respondents who are considered either supervisors, group leaders, or managers. See Table 9 for details.

**Table 9. Distribution of Respondents Based on Supervisory Status**

<table>
<thead>
<tr>
<th>Supervisor Status</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Supervisor</td>
<td>228,104</td>
<td>75.2</td>
</tr>
<tr>
<td>Supervisor</td>
<td>61,205</td>
<td>20.2</td>
</tr>
<tr>
<td>Non-respondents</td>
<td>14,130</td>
<td>4.7</td>
</tr>
</tbody>
</table>

4. **Correlations**

Although some of the survey items are measured on an ordinal level, Pearson $r$ correlation is suitable in this case because “scores are more importantly to be normally distributed than the variables satisfy the requirements of level of measurement” (Warner, 2013, p.268). In this case, Pearson $r$ correlation can be used to report the strength of the relationship between the study’s variables. The results of the zero-order correlations between the variables are shown in Table 10. The correlations generally ranged from .00 to .65, with the exception of supervisor bias and OCB, which were correlated at .71. To test whether these variables are properly measuring different concepts, a test for multicollinearity was conducted. Using the popular threshold score for stronger multiple regression models, the tolerance is set at 0.1 and
variance inflation factor (VIF) values exceeding 5 are regarded as indicating multicollinearity.

The VIF tests suggested that multicollinearity was not a concern, and no score exceeded 1.7.

Table 10. Zero-Order Correlations

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Supervisor</td>
<td>_____</td>
<td>_____</td>
<td>_____</td>
<td>_____</td>
<td>_____</td>
<td>_____</td>
<td>_____</td>
<td>_____</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Age</td>
<td>.141**</td>
<td></td>
<td>_____</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. WUP</td>
<td>.110**</td>
<td>.013**</td>
<td>_____</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PBCR</td>
<td>.161**</td>
<td>.002</td>
<td>.522**</td>
<td>_____</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Minority</td>
<td>.060**</td>
<td>-0.012**</td>
<td>.065**</td>
<td>-0.002</td>
<td>_____</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Gender</td>
<td>-</td>
<td>-0.026**</td>
<td>-0.005*</td>
<td>-0.041**</td>
<td>_____</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.093**</td>
<td>.023**</td>
<td>_____</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. PSM</td>
<td>.129**</td>
<td>.045**</td>
<td>.457**</td>
<td>.406**</td>
<td>-0.007**</td>
<td>.042**</td>
<td>_____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. OCB</td>
<td>.123**</td>
<td>-0.021**</td>
<td>.595**</td>
<td>.653**</td>
<td>.017**</td>
<td>.007**</td>
<td>.618**</td>
<td>_____</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td>.087**</td>
<td>.006**</td>
<td>.327**</td>
<td>.350**</td>
<td>-0.014**</td>
<td>-0.056**</td>
<td>.333**</td>
<td>.380**</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>Conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Supervisor</td>
<td>.053**</td>
<td>-0.018**</td>
<td>.516**</td>
<td>.484**</td>
<td>.053**</td>
<td>-0.019**</td>
<td>.352**</td>
<td>.713**</td>
<td>.251**</td>
<td>_____</td>
</tr>
<tr>
<td>Bias</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. PBCR=Performance-based cash rewards; OCB=Organizational citizenship behavior; WUP=Work-unit performance; PSM=Public Service Motivation
* Correlation is significant at the 0.05 level (2-tailed)**. Correlation is significant at the 0.01 level (2-tailed).

5. Preliminary Analysis: Test for Normality

Prior to conducting any statistical analysis, tests for normality were conducted and all the variables of interest were tested for normality using histogram and analysis of skewness and kurtosis. After running the descriptive statistics to check for normality for PSM, PBCR, work-
unit performance and OCB, the results show that only the scores on the PBCR are normally distributed as shown on Figure 2.

![Histogram of normally distributed scores for the X variable (PBCR=Performance-Based Cash Rewards)](image)

**Figure 2:** Histogram of normally distributed scores for the X variable (PBCR=Performance-Based Cash Rewards)

However, the scores on the remaining variables, namely PSM, work-unit performance and OCB are found not normally distributed, and that all three of the variables were found to be negatively skewed, where the majority of the responses fall towards the negative range of scores (longer tail on the lower end of the distribution) as shown in the following Histogram Figures (3), (4), and (5).
Figure 3: Histogram of a negatively skewed distribution of scores for the M variable (PSM=Public Service Motivation)
Figure 4: Histogram of a negatively skewed distribution of scores for the Y1 variable (OCB=Organizational Citizenship Behavior)
Figure 5: Histogram of a negatively skewed distribution of scores for the Y2 variable (WUP=Work Unit Performance)

The results of the histogram were confirmed when looking at the skewness and kurtosis tests of the three variables. Except for PBCR, the results indicated that all of the three variables of interest were significantly non-normal as shown in Table 11.

Table 11. Skewness and Kurtosis Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Skewness Statistic</th>
<th>Kurtosis Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCB</td>
<td>-0.607</td>
<td>-0.136</td>
</tr>
<tr>
<td>PSM</td>
<td>-1.232</td>
<td>2.632</td>
</tr>
<tr>
<td>PBCR</td>
<td>0.015</td>
<td>-0.822</td>
</tr>
<tr>
<td>WUP</td>
<td>-1.123</td>
<td>1.445</td>
</tr>
</tbody>
</table>

*Note. PBCR=Performance-based cash rewards; OCB=Organizational citizenship behavior; WUP=Work-unit performance; PSM=Public Service Motivation*
Generally, two common tests are used to test for the indirect effect: the Sobel test and bootstrapping. Although the Sobel test is one of the commonly used techniques to examine an indirect “mediating” effect, this test is not appropriate to test the mediating effect for this study, taking into consideration the above violations of a normal sampling distribution (Hayes, 2013). An alternative to the Sobel test is the bootstrapping technique which does not make any problematic assumptions about the distribution shape. Based on Hayes’ (2013) recommendations in his book *Introduction to Mediation, Moderation and Conditional Process Analysis*, the violations to normal distribution assumptions are deemed acceptable when using bootstrapping to examine mediation effect for at least four reasons. First, meeting the normality assumptions in linear regression may not affect the validity and the statistical significance of the findings, especially in large samples, such as the one used in this study. Second, the assumption of normality when using ordinal scale variables is rarely met. This is primarily due to the fact that measurement scales most often result in “discrete data”, meaning that values or responses observed in a 5-Likert scale variable may not vary. Third, most models used by researchers are not normally distributed. Therefore, transforming data will do little to benefit the validity of the statistical inferences observed among the study’s variables. And finally, regression analysis in general makes no assumption about the shape of the distribution. Based on these theoretical arguments stated by Hayes (2013), this researcher decides that adopting a further step to normalize the data is not only deemed an unnecessary step but seems to be of least importance, notably in large samples. Therefore, this researcher decides to use bootstrapping to test for the effects of the mediating variable in the proposed model.

6. **Test of Common Method Bias**

Since the data was collected from responses to a single survey, there is a need to test for
common method bias (CMB). Common method bias or variance can have a substantial effect as it can either inflate or deflate the relationship among the study’s variables (Podsakoff, MacKenzie, & Podsakoff, 2003). One of the sources of common method variances observed is called the consistency motif when the same person providing the responses on the IV and DV wants to look consistent to the researcher, thereby producing relationships that would not otherwise exist in real life settings. One of the most widely used methods to correct the CMB is Harman’s single-factor test. Therefore, Harman’s single-factor test was conducted to determine the extent of CMB in the present data. The results of a principal components factor analysis of all variables constrained to a single factor produced a variance of 37% on the first factor, which is below the acceptable maximum threshold of 50% of total variance (Podsakoff et. al, 2003).

7. Data Analysis and Procedure

Each of the mediation paths was structured using ordinary least squares regressions which entails the use of regression steps for each of the outcomes (Mediator [PSM], and dependent variable 1 (OCB) and (Mediator [PSM], and dependent variable 2 (work-unit performance). In the context of this study, the first estimated model included the association between performance-based cash rewards and PSM (path a or hypothesis 1). Second, PSM was regressed on both criterion variables (path b1 and b2 or hypothesis 2a and 2b). In the third step, performance-based cash rewards variable was included as a predictor of each criterion variable (path c or hypotheses 3a, 3b, 4a and 4b). The relationship between the independent and dependent variable will be tested to see if it decreases when adding the third variable (i.e. mediator). The c’ coefficient estimates the strength of the direct (also called partial) effect of perceived perceptions towards performance-based cash rewards on performance, that is, any effect of perceived perceptions towards performance-based cash rewards on OCB and unit
performance, that is not mediated by PSM. This step is sometimes omitted in the analysis of mediation models, however, it gives the reader more information regarding the strength of the association between the DVs and IV after controlling for the mediator’s effect (Warner, 2013). All three steps were adjusted for experience, age, gender, working environment, minority status, supervisor bias, and supervisor position. The results were consistent both with and without their inclusion except for minority status when OCB was the criterion variable. The regression model was not significant when minority status was controlled, \( p = 185 \).

8. Hypotheses Testing and Results

Table 12 presents the results of ordinary least squares regression. In support of Hypothesis 1, results of the regression analysis show that there is a positive relationship between performance-based cash rewards and PSM, \( b = .23, p < .001 \). This means that for every unit of increase in the cash rewards, there is a .23 increase in the level of PSM. In other words, for every unit of increase in the cash rewards there is an expected increase in the employees’ PSM levels by 23%.

Also, Hypothesis 2a and Hypothesis 2b received support in which PSM correlates positively with OCB, \( b = .57, p < .001 \), and work-unit performance, \( b = .33, p < .001 \). This means that for every unit of increase in the PSM level (regardless of whether or not the individual has a high level of PSM), there is a .57 or 57% increase in the OCB level. Similarly, for every unit of increase in the PSM level, there is a .33 or 33% increase in level of employees’ work-unit performance. Therefore, Hypothesis 2a and Hypothesis 2b were accepted.

Turning to the direct effect of the independent variable on the two outcome variables and looking at Table 12, Hypothesis 3a where performance-based rewards were expected to have a positive impact on employees’ OCB was also supported \( b = .18, p < .001 \). In other words, for
every unit of increase in the performance-based rewards, there is a .18 or 18% increase in the OCB level. Similarly, Hypothesis 3b, was supported, in which performance-based rewards were found to have a positive impact on work-unit performance, \( b = .17, p < .001 \). In other words, for every unit of increase in the performance-based cash rewards, there is a .17 or 17% increase in the work-unit performance.

As can be seen in Table 12, the R-squared value, which represents the proportion of variance in OCB and WUP that is predicted from the independent variable (performance-based cash reward) is relatively strong in both models. The R-squared value for the OCB model was (\( R^2 = .72 \))-that is, about 72% of the variance in OCB level can be predicted by perceptions to performance-based cash rewards. As for the WUP model, the R-squared value for the OCB model was (\( R^2 = .30 \))-that is, about 30% of the variance in WUP level can be predicted from perceptions of performance-based cash rewards. For both models, this is considered a very strong relationship as the more an employee value these performance rewards, the more his or her performance (both OCB and WUP) tended to increase.

Turning to the mediation hypotheses, to run inferential tests for mediation effects, this researcher followed a procedure outlined by Hayes (2013) the “PROCESS macro” which utilizes the bootstrapping technique to calculate the magnitude of the mediation effect. As discussed earlier, bootstrapping is considered superior to other methods for analyzing the indirect effects for two reasons. First, bootstrapping is useful when the “standard errors of a statistics is unknown to the researcher” (Warner, 2013, p.657). This means that bootstrapping makes no assumptions about normality of the data and is therefore useful when there are violations to the normal distribution shape (Hayes, 2013). In other words, the CI do not require that \( ab \) statistics be normally distributed across the sample. If the bootstrapping CI does not include zero, the
researcher can conclude that a statistically significant mediation occurs. And third, bootstrapping has better control over Type I error than other methods (Preacher, Rucker, & Hayes, 2007). A 10,000 bootstrap resample is used to generate 95% bias-corrected confidence intervals to get the indirect effects. The logic for using 10,000 bootstrap resamples is twofold. First, it is recommended to use 10,000 bootstraps compared to a higher number because the precision of the confidence intervals shrinks when the number is increased (Hayes, 2013). Also, the added value to increasing the bootstrap samples to more than 10,000 is very low. Thus, for an effect to be “significant”, the zero should not be contained in the 95% confidence interval.

Hypothesis 4a states that the relationship between performance-based cash rewards and OCB is mediated by PSM. Looking at Table 12 for the mediation results, the bootstrap confidence interval for the indirect effect based on 10,000 bootstrap samples was entirely above zero (95% BCI:.0380, .0403). In other words, an increase in the cash rewards is associated with greater increase in PSM, and this in turn, enhances employees’ OCB. The proportion of the total effect that is mediated by PSM was entirely above zero (95% BCI: .0380, .0403).

Hypothesis 4b states that the relationship between perceptions towards performance-based cash rewards and work-unit performance is mediated by PSM. The bootstrap confidence interval for the indirect effect based on 10,000 bootstrap samples was entirely above zero (95% BCI: .0298, .0319). This means that an increase in the perceptions towards cash rewards is associated with greater increase in PSM, and this in turn, improves the perceived performance of work-units. In theoretical terms, the proportion of the total effect that is mediated by PSM was (95% BCI:.0298, .0319) entirely above zero. Therefore, given the results, hypothesis 4b is also accepted.
It is also vital to note that the direct path from PBCRs to the two outcome variables remains significant even after accounting for PSM, indicating that PSM acts only as partial mediator in this model, and that other mediators need to be considered in future research (see the Discussion section).

**Magnitude of the Mediated Effect (Indirect Effect ab).** The indirect effect of X on Y through M is the result of multiplying the ab path coefficients. For the coefficients of Model 1 (DV= OCB), the indirect effect of X on Y through M=(.23X.57) =.13 (see Figure 6). In other words, for a one-standard deviation increase in performance-based cash rewards, there is an expected increase in employees’ OCB levels by 13% through PSM (refer to Figure 6). For the coefficients of Model 2 (DV=WUP), the indirect effect of X on Y through M is: .23*.33=.07. In other words, for one unit of increase in the performance-based cash rewards, there is an expected .07 (or 7%) increase in work-unit performance (WUP) through the mediating variable (see Figure 6). These results for the indirect effects (a*b) are confirmed when looking at the upper and lower confidence intervals in the mediation analysis as shown in Table 12.

The direct effect of perceptions towards performance-based cash rewards on performance corresponds to the c’ path. The coefficients of the first model predicting the effect of perceived perceptions towards cash rewards on organizational citizenship behavior was .18. In other words, for a one-standard deviation increase in the perceived perceptions towards performance-based cash rewards, there is a .18 predicted increase in the employees’ OCB levels.

Looking at the effect size of the proposed model, and considering $P_m$ through OCB ($P_m=.419$), the total indirect effect accounts for 42% of the total effect of PBCR on OCB. While similarly significant, $P_m$ through WUP is smaller than the total indirect effect of PBCR through OCB ($P_m=.291$), which accounts for 29% of the total effect of PBCR on WUP (see Figure 6 and
Table 13. Figure 6 provides the ratio of indirect effect of the mediator to the total effect of PBCR on the two criterion variables.

Table 12. OLS Regression-Based Path Coefficients and Indirect Effect for Mediation Models 1 (WUP) and Model 2 (OCB)

<table>
<thead>
<tr>
<th></th>
<th>Coefficients &amp; SE</th>
<th>Indirect Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>To WUP</td>
<td>To OCB</td>
</tr>
<tr>
<td>PBCR X PSM</td>
<td>.09*** (00)</td>
<td>.23*** (00)</td>
</tr>
<tr>
<td>IV: PBCR</td>
<td>.17***(00)</td>
<td>.18***(00)</td>
</tr>
<tr>
<td>PSM</td>
<td>.33***(00)</td>
<td>.57***(00)</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor Bias</td>
<td>.08***(00)</td>
<td>.44***(00)</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>.08***(00)</td>
<td>.00***(00)</td>
</tr>
<tr>
<td>Gender</td>
<td>-.03***(00)</td>
<td>-.021***(00)</td>
</tr>
<tr>
<td>Minority</td>
<td>.10***(00)</td>
<td>.04***(00)</td>
</tr>
<tr>
<td>Age</td>
<td>.07***(00)</td>
<td>-.0729***(00)</td>
</tr>
<tr>
<td>Supervisor Status</td>
<td>.01***(00)</td>
<td>.01***(00)</td>
</tr>
<tr>
<td><strong>R2</strong></td>
<td><strong>.30</strong></td>
<td><strong>.72</strong></td>
</tr>
</tbody>
</table>

Total Effect
(Direct+Indirect Effect)

PBCR→PSM
→OCB (H4a)

PBCR→PSM
→WUP (H4b)

<table>
<thead>
<tr>
<th></th>
<th>Estimate (Boot SE)</th>
<th>Bias-corrected bootstrap 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.18(00)</td>
<td>[.0380, .0403]</td>
</tr>
<tr>
<td></td>
<td>.17(00)</td>
<td>[.0298, .0319]</td>
</tr>
</tbody>
</table>

Source. Adapted from Hayes, Preacher, and Myers (2011)

Note. Bootstrap confidence intervals were constructed using 10,000 resamples. Standard error in parentheses. PBCR=Performance Based cash rewards; OCB=Organizational citizenship behavior; WUP=Work-unit performance; PSM=Public Service Motivation; CI = confidence interval; SE: standard error; Coefficients=Unstandardized Raw Scores Coefficients (denoted as b).

Total Effects: represents “the total effect of how much two cases that differ by one unit on X are estimated to differ on Y” or c=ab+ c’ (Hayes, 2013,p.93)

*p < .05. **p < .01. ***p < .001.
Figure 6: Path Coefficients and Indirect Effects for Mediation Model 1 (DV = OCB)

The following table includes a summary of the results of the direct, indirect, mediated effect and total effect of the two mediation models based on the information provided in Figure (6):
Table 13. *Direct, Indirect, Effect Size*

<table>
<thead>
<tr>
<th>Results</th>
<th>Definition</th>
<th>Formula</th>
<th>Model 1 (OCB)</th>
<th>Model 2 (WUP)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Effect</strong></td>
<td>The direct effect of X on Y</td>
<td>$c'$ path coefficients</td>
<td>.18</td>
<td>.17</td>
</tr>
<tr>
<td><strong>Indirect Effect</strong></td>
<td>The indirect effect of X on Y through M.</td>
<td>$a*b$</td>
<td>$ab=23*.57=.13$</td>
<td>$ab=23*.33=.07$</td>
</tr>
<tr>
<td><strong>Effect Size (Percent Mediation)</strong></td>
<td>The ratio of the indirect effect to the total effect (Preacher &amp; Kelley, 2011)</td>
<td>$P_m=\frac{ab}{ab+c'}$</td>
<td>$ab=23*.57=.13$; $c'=0.18$; $P_m=0.419$</td>
<td>$ab=23*.33=.07$; $c'=0.17$; $P_m=0.291$</td>
</tr>
<tr>
<td><strong>Total Effect</strong></td>
<td>How much two cases that differ by one unit on X are estimated to differ on Y” or “the sum of the direct and indirect effects on X” (Hayes, 2013,p.92-93)</td>
<td>$c=ab+c'$</td>
<td>Total Effect=.13+.18=.31</td>
<td>Total Effect=.07+.17=.24</td>
</tr>
</tbody>
</table>

*Note.* OCB=Organizational citizenship behavior; WUP=Work-unit performance
Chapter Summary

In this chapter, this researcher provides a discussion of the chosen research design, analysis process and approach, and statistical techniques used to arrive at the study’s findings. Also, linear regression and mediation analysis were conducted using SPSS and Hayes’ PROCESS macro. These techniques help to describe the relationship between perceptions towards performance-based cash rewards and two performance related outcomes: OCB and WUP through a mediator variable which is PSM. An overview of the descriptive statistics, correlation among variables, analysis of normality distribution, and a test of common method bias were also provided along with a description of the study’s participants and demographics. The results show support to the stated hypotheses of this study and all the models came back as statistically significant at a 95% confidence level (see Table 14). The findings indicate that PSM has a higher mediating influence on OCB compared to its mediating influence on work-unit performance.
Table 14. Summary of the Study's Tested Hypotheses

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Results of Hypothesis Testing</th>
<th>Results from the Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H1</strong>: Performance-based cash rewards have a positive impact on PSM.</td>
<td>Accepted</td>
<td>An increase by one unit in the perceptions towards cash rewards is estimated to increase the level of employees’ PSM by .40 unit.</td>
</tr>
<tr>
<td><strong>H2a</strong>: PSM is associated positively with OCB</td>
<td>Accepted</td>
<td>PSM correlates positively with OCB, $\beta = .32, p &lt; .001$</td>
</tr>
<tr>
<td><strong>H2b</strong>: PSM is associated positively with work-unit performance.</td>
<td>Accepted</td>
<td>PSM correlates positively with work-unit performance, $\beta = .22, p &lt; .001$</td>
</tr>
<tr>
<td><strong>H3a</strong>: Performance-based cash rewards have a positive impact on OCB.</td>
<td>Accepted</td>
<td>Performance-based rewards have a positive impact on employees’ OCB, $\beta = .27, p &lt; .001$</td>
</tr>
<tr>
<td><strong>H3b</strong>: Performance-based cash rewards have a positive impact on work unit performance.</td>
<td>Accepted</td>
<td>Performance-based rewards have a positive impact on work-unit performance, $\beta = .17, p &lt; .001$.</td>
</tr>
</tbody>
</table>

**Mediated Effect**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Results of Hypothesis Testing</th>
<th>Results from PROCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H4a</strong>: The relationship between performance-based cash rewards and OCB is mediated by PSM.</td>
<td>Accepted</td>
<td>Indirect effect based on 10,000 bootstrap samples was entirely above zero (95% BCI: .0380, .0403).</td>
</tr>
<tr>
<td><strong>H4b</strong>: The relationship between performance-based cash rewards and work-unit performance is mediated by PSM.</td>
<td>Accepted</td>
<td>Indirect effect based on 10,000 bootstrap samples was entirely above zero (95% BCI: .0298, .0319).</td>
</tr>
</tbody>
</table>
Chapter Five

Conclusion, Implications, Limitations, and Recommendations for Future Research

The present study contributes to a growing body of research to extend the theory of public service motivation and to investigate the interventions made by the government to enhance the performance of public sector employees. This study also represents a response to a request made by the U.S. Merit Systems Protection Board (2012) to survey federal employees on their reward desires so that federal managers can work closely with employee representatives to enact policy change necessary to modify the current reward system that includes mainly monetary rewards.

1. Study Overview

This study aims to contribute to the PSM research by exploring its indirect effect in the relationship between performance-based cash rewards and two performance related-behaviors: OCB and work-unit performance. There are a lot of mixed findings in the literature between cash rewards and public service motivation which necessitates further empirical evidence. In the present study, performance-based cash rewards and PSM were found to have substantively significant effects and positively correlated with employee perceptions of performance, both at the individual and organizational levels. Frey (1994) argued that external interventions do not always impair work competence but have the opposite effect in that they can enhance intrinsic motivation. Motivation crowding theory, therefore, was expected to explain the positive response of employees with high levels of PSM to the extrinsic dimension of the rewards, the so-called “hidden gains of rewards”.

This study, in part, responds to these needs by analyzing a large sample of federal employees, using two dependent variables that define different aspects of job performance and
allows competing theories to explain the relationship among the study’s variables (i.e. PSM, motivation crowding theory, expectancy theory and public choice theory).

2. **Key Findings**

   The empirical findings of this study provide support for the causal model proposed, including all of the seven hypotheses that were tested. Employees’ perceptions towards cash rewards were found to have a significant positive affect on PSM, which in turn, improves performance. This researcher has found that PSM is positively associated with OCB and WUP in federal agencies, even after controlling for age, gender, supervisor bias, supervisor status, and working conditions, except when minority status was added, wherein the model came back not statistically significant. This study also finds that PSM has a more mediating influence on organizational citizenship behavior (OCB) than on work-unit performance (WUP). It should be noted that some variables were not controlled for in this study due to limitations in the data although they might have an impact on the significance of the models, such as education and income level.

   It is vital to note that the distribution of these cash awards is in the hands of the public manager who has the authority to allocate these awards among employees (Fernandez & Moldogaziev, 2011). This means that if these performance rewards are not distributed fairly, they can be counterproductive and have negative effects on performance.

3. **Theoretical Significance of the Study**

   The theoretical significance of this study is threefold. First, this study shows that perceptions of performance-based cash rewards have a strong positive effect on public service motivation, even after controlling for gender, age, supervision bias, supervisor status, and working conditions. At the micro level, the crowding theory of motivation suggests that external
interventions in the form of extrinsic rewards can increase intrinsic motivation if properly implemented. These findings run contrary to the majority of studies offering empirical evidence that supports the crowding–out effects of financial incentives on public service motivation (e.g. Christensen et al., 2017; Weibel, Rost, & Osterloh, 2010). The present study offers support to the work of Bertelli (2006) whose findings indicate that certain aspects of the IRS compensation structure crowd in and strengthen intrinsic motivation. Also, it provides empirical evidence to support the crowding in effect of PSM, specifically in the public sector, using a large sample of the federal employees.

Second, the findings of the present study suggest that PSM-performance relationships can vary depending on the different aspects of performance dimensions being measured. The results of this study show that PSM has more mediating influence on OCB (42%) compared to its influence on WUP (29%) measured by the total indirect effect of PSM on the outcome variables. This result echoes the argument by Brewer and Selden (1998) who, in light of their work on measuring organizational performance at the federal level, suggested that performance in the public sector is indeed multidimensional and different aspects of performance must be examined closely.

Third, the fact that PSM was found to be partially mediating the relationship between PBCR and two performance-related outcomes indicates the need for future research to explore more organizational variables in which PSM acts as a mediator using unique samples that can help broaden the understanding of the theory in federal settings. This finding provides support to the work of Gould-Williams et. al (2015) who provide empirical evidence of the mediating role of PSM, in which PSM was found to be partially mediating the relationship between high-performing human resource practices and the relationship between two employee outcomes.
(OCB and affective commitment). Despite the fact that Gould-Williams et. al. (2015) use a different theoretical lens through the social exchange theory, the results are consistent.

It should be noted that the 2016 FEVS includes responses from federal employees in five different levels of the bureaucracy: nonsupervisory employees, team leaders, and supervisors; managers and senior executives. The decision to include all of the full sample of employees rather than a truncated sample of one layer of bureaucracy is twofold. First, the concepts of performance, performance rewards, and PSM apply equally to all employees, regardless of their position in the hierarchy. Second, previous research shows that when a full sample and a truncated sample of only nonsupervisory employees and team leaders were tested, there was no noticeable difference in the findings (Fernandez & Moldogaziev, 2011).
4. Policy Implications and Importance for Public Policy and Administration

Incentives in the form of rewards have often been considered a meaningful predictor of high performance. However, existing research has yet to address the context of public sector environments or the role played by cash incentives in enhancing employees’ levels of PSM (explained through the motivation crowding theory, which indirectly affect their performance explained through the expectancy theory). Therefore, the findings of this study will be of interest to public managers, supervisors, and public human resources practitioners working in federal agencies in many ways. First, public managers need to be better equipped to attract motivated public service employees by offering rewards that federal employees truly value. The results of this study will help public managers focus on the type of reward that is more valuable to motivate employees to perform higher. Second, since monetary rewards through merit pay are found to have a positive impact on employee performance, the federal government needs to emphasize the role of monetary incentives as a primary component of the reward system. For a reward to be effective in improving performance, federal agencies need to give the right reward in the right way. Third, this study directs the attention to the value of cash rewards on enhancing PSM of the federal employees. Cash rewards, which is part of the total reward system, increase employees’ motivation to serve public sector organizations, which, in turn, affects their performance. Therefore, a well-designed total rewards structure that includes cash rewards, based on the results of this study, is seen to be an effective tool in enhancing PSM which, in turn, improves performance. These results should direct the attention to the importance of linking pay, merit increases, and bonuses to both organizational and individual performance using a performance management system that makes an effective distinction in individual performance (U.S. Government Accountability Office, 2019)
Second, as PBCRs are positively related to PSM and performance, public managers should invest all possible resources to effectively allocate rewards based on actual performance. The cost associated with designing and enhancing these rewards in federal agencies do not only include financial investments, but more importantly investment in training managers and supervisors how to distribute these rewards fairly and equally among employees, whether they are in the form of promotions or merit increases.

5. Limitations of the Study

As is the case with any research, there are some inherent limitations that should be noted. First, a methodological limitation of this study lies in the non-experimental associational nature of the design, which does not draw causal relationships among the variables used in this study. Second, this study uses federal government employees’ perceptions, and thus limits the findings to only federal government employees. Future studies are required to assess the relationship among the variables used in this study using samples from state and local government employees. Third, this study is based within the U.S. context, through measuring variables that are known to affect federal government employees in the U.S. Therefore, the variables used in this study may or may not have the same impact on employee performance if the study is conducted in a different country. Fourth, the way “performance-based cash rewards” is operationalized in the dataset is not comprehensive in nature and therefore should be interpreted with caution. Fifth, this study uses only one element of the pay for performance system that is commonly used in most federal government agencies which is cash rewards, thus limiting the generalizability of the study’s findings on the other components of the reward system. Future studies are needed to test the mechanism through which PSM impacts other elements of pay for performance, such as group sharing plans, piece rates, and commission rates. Sixth, this study
uses internal self-perceptive measures of performance instead external data. Using internal measures of performance to measure both OCB and organizational performance, like the ones used in this study, however, does not allow one to form a full picture of the seriousness of the issue perceived by employees. Other measures of organizational performance, such as output and efficiency, must be considered along with external measures of performance as perceived by external stakeholders (e.g. service consumers, regulators). This study is limited to measuring internal perceptual “judgmental” measures of performance as perceived by senior management and frontline employees. Despite being helpful in providing information from within the organizations, internal and perceptual measures of performance “are seen to be limited because they suffer from a number of flaws, of which common-method bias is believed to be the most serious” (Walker & Boyne, 2006, p.378).

Besides the perceptive measures of performance, the questions used to measure performance-based cash rewards are also measuring perceptions of rewards. These measures do not refer to the actual extrinsic or monetary rewards received but to the phenomenon in question (i.e. having a feeling that pay raise is based on how an employee performed). Therefore, the empirical evidence found suggests fidelity in the way in which participants respond to the survey questions measuring this variable, along with other perceptive measures indicated above. Thus, future studies are needed to strengthen the findings of this study by testing a similar model and using external measures of performance (those developed by external stakeholders). And finally, this study measures public service motivation as a one construct to suit the context of this study and due to limitations in the dataset. Future studies may include sub-dimensions of PSM, such as self-sacrifice, and compassion to aid in the generalizability of the study’s findings. Despite the aforementioned limitations, this study contributes to expanding PSM and performance
management literature by testing the role of PSM both at the individual and organizational levels in federal settings.

6. Recommendations for Future Research

The present study offers five avenues for further research. Those areas are discussed herein.

First, future studies are needed to further unravel the potential mediating role of PSM in various domains and different settings. Also, there is a need within the federal settings to test the mechanism by which intrinsic rewards affect PSM which, in turn, affect performance.

Second, future research should look at the variance of performance and PSM levels within each agency to answer questions such as whether PSM dimensions, such as compassion and self-sacrifice are higher in some agencies than others and whether individual and work-unit performance levels differ from agency to another. Such studies will provide a broader picture of the variance within agencies, thus capturing the unique characteristics of agencies at the macro level.

Third, at the micro level, another area of future research should consider looking at whether generational gaps between, for example, Millennials and Baby Boomers, exist, and if they differ in their perceptions towards extrinsic rewards and whether PSM levels differ across the different age groups in those generations.

Fourth, the study included PSM as one mediating variable that indirectly contributes to increased performance in federal agencies. Thus, future research is required to test the mediating role of other variables that directly and indirectly affect federal employee performance, such as extrinsic rewards.
Finally, this study measures PSM as one construct due to limitations in the dataset. Unfortunately, the Federal Employee Viewpoint Survey (FEVS) does not have a variety of questions to measure specific dimensions of PSM, which limits the possibility of measuring PSM as a multidimensional construct. Thus, future studies are needed to measure each of the underlying dimensions of PSM, such as compassion and attraction to public policy to see how this affects the findings and whether they will be consistent with the results of this study.
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• Awarded King Abdullah Scholarship (2017-2020)

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