

May 2020

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Recommended Citation

Wesemann, Andrew (2020) "The Role of Strategic Human Capital Management in the Performance of Federal Agencies," *Journal of Public Management & Social Policy*. Vol. 26 : No. 2 , Article 1.

Available at: <https://digitalscholarship.tsu.edu/jpmmsp/vol26/iss2/1>

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The Role of Strategic Human Capital Management in the Performance of Federal Agencies

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The current human capital crisis, compounded by tumultuous workforce conditions in the public sector, holds consequential implications for governmental performance. As a result, scholarship has emerged emphasizing the importance of strategic human capital management (SHCM), which is explicitly intended to curtail organizational instability and concurrently improve performance levels. There is, however, a paucity of empirical research testing whether SHCM does, in fact, influence performance in public sector organizations. In an effort to fill this gap in the literature, this study tests for such a relationship in an analysis of agencies throughout the U.S. federal government. Using data from a large sample of federal employees, within 45 agencies, hierarchical linear modeling results reveal that SHCM holds a significantly positive relationship with performance measures at the employee level, although agency level results are less conclusive. Nevertheless, findings provide foundational quantitative evidence that the performance related benefits of SHCM are generalizable to the public workforce and transcend sector boundaries.

Introduction

Public sector organizations face increasingly complex and turbulent workforce environments, and organizational performance hinges, at least in part, on the ways in which managers chose to respond to these conditions. Declining human capital levels across the U.S. workforce, coupled with extremely volatile financial and political economies, pose substantial threats to organizational success and survival. In particular, a growing human capital crisis continues to materialize as a tremendous proportion of the U.S. workforce has started to retire and will continue to do so over the coming decades; thus, leaving a significant disparity in the number of employees prepared to fill these position vacancies (Bradshaw-Lynn, 2001; Kochanowski, 2011).

During the coming decades, research shows that labor force attrition rates will significantly outweigh entrant rates, and labor force participation rates are projected to effectively drop 9.6 percent by 2060, resulting in a significant human capital shortage (Toossi, 2012; Toossi, 2016). This problem is further exacerbated in the public sector, relative to the private sector, as its workforce is relatively older and comprised of a higher proportion of employees in more technical and professionalized positions that are difficult to replace (GAO, 2017). In short, this

implies that the public sector will experience even higher attrition rates and have greater difficulty finding adequate successors in comparison to the private sector.

Not surprisingly, this impending human capital crisis has spurred growing interest among practitioners and scholars in strategic human capital management (SHCM) as a means for curtailing the harmful effects of turbulent workforce climates, while at the same time achieving sustained competitive advantages. Scholars and practitioners argue that SHCM has the potential to help organizations prepare for and adapt to numerous workforce challenges and subsequently produce performance gains (Condrey, 2010; Kim, 2010; Green & Roberts, 2012). On the whole, human capital refers to the knowledge, skills, and abilities innately embedded within individuals. The strategic management of human capital, therefore, entails creating, developing, and leveraging human capital to drive higher performance levels and experience beneficial organizational outcomes (McGregor, 1991; Ingham, 2007; Selden, 2009).

Though scholarship has established a strong theoretical relationship between SHCM and performance, few empirical studies exist that test for this relationship in the U.S. public sector. Even less common, however, are studies that quantitatively examine this relationship at the federal level. Thus, the focal objective and contribution of this study is to investigate the degree to which SHCM influences public sector performance, specifically focusing on U.S. federal agencies. Such a contribution is of particular importance, because, since 2001, the U.S. federal government has invested substantial resources in SHCM initiatives in order to curtail the harmful effects of a growing human capital crisis (Walker, 2007; GAO, 2017). Clearly, though, investment in SHCM without empirical evidence for its perceived benefits in the public sector holds substantial fiscal and performance implications, especially for the federal government which has already embraced SHCM theory and practice.

Thus, to test for the impact of SHCM on federal government performance, I analyze data from the U.S. Office of Personnel Management (OPM) 2018 Federal Employee Viewpoint Survey (FEVS). The following sections examine the literature on SHCM, as well as SHCM initiatives by the federal government. I then turn to the study's contribution to the literature and theoretical expectations, which link SHCM to improved governmental performance. Subsequent sections highlight data, measures used, and the results of hierarchical linear modeling analyses. Finally, I close with a discussion of the implications of results for both scholars and practitioners.

SHCM in the Literature

A large body of literature has developed over several decades that establishes a strong theoretical linkage between SHCM and positive organizational outcomes in both the public and private sector. By and large, the literature argues that

human capital characterizes the primary and fundamental element of SHCM. Further, human capital is typically defined as the knowledge, skills, and abilities embedded within individuals as innate characteristics, or that are acquired and developed through education, training, and experience (Selden, 2009). Congruently, then, the strategic management of human capital entails creating, developing, and leveraging human capital that leads to optimal employee and organizational performance (Ingham, 2007; Selden, 2009).

In a seminal contribution to the SHCM literature, McGregor (1991, p. 3) argued that the competitive management of human capital stored in people is crucial in postindustrial economies, as the actual attainment of organizational objectives and goals are increasingly dependent upon the capacity of employees to bring knowledge, skills, and abilities to the task of productivity. In addition, McGregor argued that in order for organizational success to be realized, it is necessary to interpret SHCM as the strategic management of a strategic resource (i.e., human capital). Thus, the task at hand involves making the right people available at the right time to do the right thing. In essence, this means that the strategic goals and objectives of an organization must be fused to the human capital that generates final outcomes (McGregor, 1991).

As such, SHCM theory suggests that managers must learn to think systematically about the numerous connections between organizational strategy and people. In doing so, organizations become better equipped to effectively address turbulent and vexing workforce conditions. This process, therefore, necessitates a transition from traditional human resource management (HRM) approaches to SHCM (Condrey, 2010).

Research differentiates between traditional HRM and SHCM such that traditional HRM largely possesses a strong functional focus, which emphasizes the administration and regulation of personnel systems and policies that are fragmented in nature. Conversely, SHCM emphasizes the importance of empowering people to help organizations achieve their strategic objectives and goals (McGregor, 1991; Lengnick-Hall et al., 2009; Selden, 2009; Perry, 2010; Ananthram, 2013). Put differently, traditional HRM tends to be preoccupied with operational rules and policies, which demonstrate little integration across functions that are used to manage people in organizations. Alternatively, SHCM embraces a broader human resources perspective, emphasizing the importance of planning, collaboration, and partnership to accomplish organizational goals (Selden, 2009, p. 5). Here, the SHCM perspective suggests that the primary asset of an organization is stored in its people, and thus personnel managers must think strategically about decisions involving human capital (Ananthram, 2013).

In addition, scholarship suggests that SHCM differs from traditional HRM as it emphasizes the importance of organizational performance rather than purely individual performance. Similarly, SHCM highlights the role of management

systems as solutions to organizational problems rather than focusing on individual management practices left in isolation (Becker & Huselid, 2006, p. 899). This theoretical transition holds substantial implications for the field as it suggests that research should be conducted in such a way that the aggregate impact of SHCM is evaluated as opposed to simply focusing on individual level outcomes. Perhaps more importantly, however, Becker and Huselid (2006) argue that the SHCM literature has moved from looking at the nature of appropriate HRM models to viewing this process as a value-creating system. Here, the SHCM system is the most important organizational strength as it creates value through workforce skills and competencies, as well as employee commitment and engagement, which in turn lead to improved performance.

Further, Guthrie and Olian (1991) argue that traditional HRM approaches lack innovative capacities and focus on the impact of administrative interventions and practices on employees' affect and behavior while failing to consider broader contextual factors that vary across organizations. As such, given increasingly turbulent work environments, it is important for scholars to focus on differences in HRM practices that will develop in response to variability in organizational and environmental characteristics. In other words, it is preferable for scholarship to focus on contextual factors that shape organizational HRM practices to gain insight into their effectiveness or lack thereof (Guthrie & Olian, 1991).

Importantly, however, not all scholarship calls for a complete transition to the SHCM approach. In fact, some scholars argue HRM practices can be a source of sustained organizational success when they are unique, causally ambiguous, synergistic and difficult to imitate (Brown, 2004). Still, SHCM advocates assert that it is virtually impossible for HRM practices to be rare, unmatched and non-substitutable, and that the evidence for the effects of such practices on workforce characteristics is inadequate (Delery & Roumpi, 2017). In an effort to build upon and mesh both theoretical arguments, however, Delery and Roumpi (2017) make the proposition that organizations, specifically private sector firms, can only gain competitive advantages through the interplay between SHCM and HRM practices. In essence, the authors suggest that these two camps are responsible for shaping and bringing about each other. Nevertheless, the transition toward a strategic view of HRM has occurred largely due to the mostly harmonious belief among scholars that for organizations to experience substantially greater gains and outcomes, leaders must aim to manage a workforce in which human capital is a strategic input to the production process and either a strategic component of the production process, an output, or both (McGregor, 1991, p.147). By laying this theoretical framework, management scholars have been provided with a research foundation on which to build, and as such the SHCM literature has developed at a rather rapid rate.

Scholarship that is especially public sector focused argues that SHCM embraces the alignment of an organization's mission and goals with a core set of analytically grounded practices that focus on strategic human capital planning, recruitment, selection, retention, human capital development, and management of employee performance. Although there is not full agreement concerning the specific practices that SHCM should encompass, largely because in order to be strategic, it is essential that such practices align with a particular organization's needs and strategic direction (Jacobson & Sowa, 2015). Nevertheless, research indicates that SHCM practices can be grouped into broad areas that include focusing on organizational mission and values to attract potential candidates, communication practices, recruitment and retention practices, performance evaluation, innovative job design, and emphasis on workforce diversity (Jacobson & Sowa, 2015, p. 321). Thus, theory suggests public organizations that generally utilize these SHCM practices, to the extent that they align with the larger organizational culture, will be able to harness and leverage their human capital stock, and in turn, experience performance related gains (Jacobson & Sowa, 2015).

Taken together, scholarship argues that the largest organizational asset is stored in its people, and thus organizations must think strategically about decisions involving human capital (Teodoro & Switzer, 2016). In doing so, it is crucial for managers to establish a performance based workforce in which SHCM policies, practices, and systems are driven by an organization's strategic objectives and are internally consistent and integrated (Selden, 2009). In the public sector, specifically, the core requirement of SHCM emphasizes the alignment of personnel policies and practices with organizational strategic objectives. Although there is not clear consensus concerning the specific practices and policies that SHCM should encompass, research clearly suggests that it is crucial for these policies and practices to align with the strategic direction and needs of a particular organization (Jacobson & Sowa, 2015). To this end, SHCM involves the management, creation, and development of invaluable and somewhat intangible human capital that is strategically utilized to achieve a multitude of performance related benefits (McGregor, 1991; Jacobson & Sowa, 2015).

Grounded in SHCM theory, a large body of empirical research has emerged with evidence supporting the performance related benefits of SHCM. However, a majority of this literature has been derived from studies that focus on private sector entities. In addition, quantitative public sector research in this area is even less common. Yet, the studies that do quantitatively assess the impact of SHCM in the public sector have been limited in scope, focusing almost exclusively on one particular organization at a time (Teodoro & Switzer, 2016). As such, it remains unclear as to whether or not these results are generalizable and extend to a majority of public sector organizations.

SHCM in the U.S. Federal Government

The paucity of quantitative empirical research on SHCM is surprising, given the pressing call by the U.S. federal government for agencies to utilize SHCM in order to limit the effects of the emerging human capital crisis. As previously elucidated, the U.S. federal government has proactively responded to the human capital crisis, and has embarked on perhaps the largest SHCM initiative to-date in the public sector. Since 2001, SHCM has been among the U.S. Government Accountability Office's (GAO) *High Risk List*. In particular, the GAO has argued, "Current budget and long-term fiscal pressures, the changing nature of federal work, and a potential wave of employee retirements that could produce gaps in leadership and institutional knowledge, threaten to aggravate the problems created by existing skill gaps (GAO, 2017, p. 61)." Clearly, the federal government's ability to manage vexing contexts necessitates a skilled and competent workforce. But despite underscoring the importance of SHCM and the challenges faced by the federal workforce, progress made in this area has been modest and the impact of federal SHCM has mostly been untested.

Addressing this question is of crucial importance, especially for the U.S. federal government, since many agencies have begun devoting substantial resources to undertake broad based civil service reforms intended to address their human capital needs through SHCM (GAO, 2017; Walker, 2007). In particular, the GAO (2017) asserts that agencies have invested a substantial amount of time in developing an infrastructure for identifying and addressing mission-critical skill gaps. Further, research shows that personnel costs represent one of the most significant expenditures for public organizations. More specifically, these expenditures often comprise at minimum 80 percent of a public organizations operating budget (Jacobson & Sowa, 2015). Undoubtedly, determining whether government resources are utilized to actually achieve a high performing workforce warrants substantial empirical investigation.

Before proceeding, however, it is important to note that the FEVS has been widely used by scholars in a multitude of peer-reviewed publications that have made substantial contributions to public management field. Surprisingly, however, such publications have not used the FEVS, which was initially developed primarily to evaluate the federal government's human capital needs, and to contextualize and examine the effects of SHCM in the federal workforce. Specifically, in a review of the literature that has utilized the FEVS, Fernandez et al. (2015) did not identify a single study out of 42 research publications that explicitly examines SHCM.

Contribution

The literature reviewed above has developed a strong theoretical framework connecting SHCM to organizational performance. In addition, empirical research reveals that SHCM holds a strong positive relationship with performance related outcomes in the private sector. Yet a gap in the SHCM literature remains unfilled as prior research has not quantitatively assessed the impact of SHCM on public sector performance on a large scale. Perhaps more importantly, however, research has not tested the impact of SHCM on the performance of the U.S. federal workforce, which has already made significant investments in this area, despite the availability of SHCM data provided through the FEVS.

Therefore, taken together, the primary contribution of this study is the determination of whether or not a positive relationship between SHCM and organizational performance is found in the federal government. In doing so, I aim to fill the aforementioned gap in the empirical public sector literature and provide insight into the generalizability and applicability of SHCM theory to public sector organizations.

Data, Variables, and Methods

Management theory clearly links SHCM to improved organizational performance, and therefore, this study is specifically interested in evaluating the success of federal government SHCM efforts on this dimension. To empirically test the hypothesized relationship, this study utilizes data from the U.S. Office of Personnel Management (OPM) 2018 Federal Employee Viewpoint Survey (FEVS). The FEVS is designed to measure federal employee perceptions of various workforce characteristics that are present in their agency and provides data on progress made on the GAO's strategic human capital initiatives. The FEVS has been administered on an annual basis, beginning in 2002; however, due to data limitations, longitudinal analysis is not an appropriate method for addressing this study's research question. Thus, in order to obtain a pertinent understanding of current SHCM efforts in the federal government, this study uses data obtained through the 2018 FEVS.

Descriptive statistics for the entire sample of 2018 FEVS respondents are presented in Table 1. The response rate in the 2018 FEVS was 40.6 percent, which equates to 598,003 respondents employed in over 45 federal agencies.

Table 1: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Quality of Work	594870	4.264	0.804	1	5
Accomplishing Mission	578380	3.939	0.905	1	5
SHCM: Direct Supervisor	490166	3.966	0.875	1	5
SHCM: General Leadership	417029	3.581	0.937	1	5
SHCM: Performance Incentives	475197	3.066	1.020	1	5
Female	518903	0.435	0.496	0	1
Education Level	520623	2.076	0.802	1	3
Tenure	524927	1.845	0.816	1	3
Supervisor	534041	0.190	0.392	0	1
Minority	510686	0.329	0.470	0	1
Leave Intention	505298	0.243	0.429	0	1
Agency Size	598003	40277	21714	326	73899
Mean SHCM: Direct Supervisor	598003	3.966	0.112	3.724	4.371
Mean SHCM: Senior Leadership	598003	3.579	0.164	3.236	4.154
Mean SHCM: Performance Incentives	598003	3.070	0.173	2.684	3.679

Dependent Variables

Public management scholars, in contrast to their private sector counterparts, must grapple with determining how to adequately quantify organizational performance. Scholarship suggests that measuring performance in the private sector is far less vexing, because firms are primarily concerned with performance in terms of profits. Conversely, measuring performance in the public sector is more difficult, given that governmental entities are primarily driven by public service provisions that encompass numerous externalities, which are less tangible (Camilleri & Van Der Heijden, 2007). As a result, public sector research, in many cases, must rely on subjective measures of performance, such as constituent and stakeholder assessments.

In spite of the challenges associated with quantifying governmental performance, viable options for empirical testing exist. Fortunately, data collected through the FEVS provide two particular measures of performance, which have strong theoretical foundations—1) the overall quality of work produced by an agency and 2) the extent to which an agency is able to accomplish its mission. In fact, research asserts that the overall quality of work produced by a given organization is vital to its success, a key performance outcome, and serves as a bottom line indicator of value creation and sustained competitive advantage (Becker & Gerhart, 1996). Scholarship also suggests that the primary goal of

SHCM is to create performance-aligned workforces by adopting systems, policies, and practices that are driven by and matched with an organization's strategic mission (Selden, 2009, p. 32; Ingham, 2007).

In the 2018 FEVS, employees were asked to rate the overall quality of work produced by their respective agency. Data were coded on a 5 point scale with 1 being "Very Poor" and 5 being "Very Good." In addition, employees were asked to evaluate the degree to which their respective agency was able to accomplish its mission. Here, again, data were coded on a 5 point scale, with 1 being the lowest employee rating and 5 representing the highest. It is important to note, however, that when the "Do Not Know" option was selected, these values were coded as missing in this analysis.

Independent Variables

The questions posed in the FEVS are designed to measure the degree to which the U.S. government's workforce is engaging in its mandated SHCM initiatives. Intuitively, however, many of the FEVS variables appeared to be correlated and conceptually seem to measure similar constructs. Given the nature of the data, then, exploratory principal components factor analysis was employed to eliminate data redundancy and create aggregate measures of SHCM. Factor analysis results allowed for the aggregation of three particular SHCM independent variables, with high factor loadings on SHCM efforts in terms of direct supervision, general leadership, and performance incentives. In other words, this study utilizes three independent variables for SHCM; specifically, SHCM practices involving federal employees' experience with 1) direct supervision, 2) general leadership, and 3) performance incentives. These independent variables of interest were developed at the employee level and then mean centered at the agency level.

Controls

To control for other potential factors influencing agency performance, I include several relevant employee- and agency-level covariates in the analyses. In particular, at the employee level, I include dichotomous controls for gender, supervisory status, minority status, and intention to leave the agency. I also use ordinal controls for education level (coded 1 for less than a bachelor's degree; 2 for bachelor's degree; and 3 for more than a bachelor's degree) and employee tenure (coded 1 for ten or fewer years; 2 for more than 10 years; and 3 for more than 20 years). Though I do not have a clear expectation for the direction or size of the impact of gender, supervisory status, or minority status, I anticipate that employee tenure and education level will positively correlate with agency performance as these may indicate higher levels of human capital embedded within an agency. Conversely, I expect that employee leave intention will be negatively associated with agency performance, given the large body of

scholarship that suggests voluntary turnover holds a negative relationship with various performance indicators (Benson et al., 2004; Gittikker, 1995; Somaya et al., 2008).

Additionally, I include the number of respondents per agency as a proxy for agency size in the analytic sample, at the agency level. I expect agency size will be negatively associated with the performance variables as it may indicate a more complex bureaucratic structure, making it difficult for agencies to achieve their respective goals and objectives (Wilson, 1989).

Methods

As elucidated above, factor analysis was employed to develop aggregate constructs for SHCM. After running a factor analysis for questions 1 to 62 (excluding our dependent variables, questions 28 and 39), 7 factors with Eigen values of 1 or greater were retained. However, 46.05 percent of the variance in the analysis was accounted for by factors 1, 2, and 3. Using the varimax rotation method, the factors generally loaded as expected. Significant loadings for factors 1, 2, and 3 included items which intuitively aligned with SHCM indicators.

In particular, significant loadings for items in factor 1 indicated SHCM efforts by direct supervisors, whereas factor 2 loadings reflected SHCM initiatives from general leadership throughout the organization. Further, items with significant loading in factor 3 implicitly show SHCM practices employing performance incentives. Cronbach's alpha was calculated for each group of variables with high factor loadings, and the results revealed high levels of reliability and internal consistency. Alternatively, items with high factor loadings in the remaining factors do not theoretically appear to be pertinent to SHCM; instead, these indicate more traditional, administrative HRM policies and procedures. Cronbach's alpha calculations for these variable groupings were relatively lower, as well. These items, therefore, were not included in the analyses. Results of the factor analysis are provided in Table 2.

Thus, given the theoretical nature of the data, items loading on to factors 1, 2, and 3 were aggregated at the employee level to create three independent variables of interest for SHCM efforts put forth by direct supervisors, general leadership, as well as organizational performance incentives. Then, the SHCM independent variables of interest were mean centered at the agency level to capture the likely variation existing between organizational levels. In all, the aggregation of loadings produced through exploratory factor analysis allowed for the creation of SHCM constructs at the employee and agency level, which serve as this study's principal independent variables.

Table 2: Factor Analysis for SHCM use in Federal Agencies

	Factor		
	1	2	3
I have trust and confidence in my supervisor.	0.860		
My supervisor listens to what I have to say.	0.848		
My supervisor treats me with respect.	0.842		
Discussions with my supervisor about my performance are worthwhile.	0.835		
Overall, how good a job do you feel is being done by your immediate supervisor?	0.827		
My supervisor provides me with constructive suggestions to improve my job performance.	0.820		
My supervisor provides me with opportunities to demonstrate my leadership skills.	0.777		
My supervisor is committed to a workforce representative of all segments of society.	0.768		
My supervisor supports my need to balance work and other life issues.	0.747		
Supervisors in my work unit support employee development.	0.724		
In the last six months, my supervisor has talked with me about my performance.	0.709		
My performance appraisal is a fair reflection of my performance.	0.530		
In my most recent performance appraisal, I understood what I had to do to be rated at different performance levels (for example, Fully Successful, Outstanding).	0.521		
I feel encouraged to come up with new and better ways of doing things.	0.418		
I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.	0.415		
I am given a real opportunity to improve my skills in my organization.	0.411		
I have a high level of respect for my organization's senior leaders.		0.766	
In my organization, senior leaders generate high levels of motivation and commitment in the workforce.		0.761	
My organization's senior leaders maintain high standards of honesty and integrity.		0.758	
Managers promote communication among different work units (for example, about projects, goals, needed resources).		0.743	
Managers communicate the goals of the organization.		0.734	
Managers review and evaluate the organization's progress toward meeting its goals and objectives.		0.733	
Managers support collaboration across work units to accomplish work objectives.		0.729	
Senior leaders demonstrate support for Work/Life programs.		0.676	
Overall, how good a job do you feel is being done by the manager directly above your immediate supervisor?		0.666	
Supervisors work well with employees of different backgrounds.		0.587	
I recommend my organization as a good place to work.		0.502	

I believe the results of this survey will be used to make my agency a better place to work.	0.489		
Employees have a feeling of personal empowerment with respect to work processes.	0.468		
Arbitrary action, personal favoritism and coercion for partisan political purposes are not tolerated.	0.448		
In my work unit, differences in performance are recognized in a meaningful way.		0.684	
Awards in my work unit depend on how well employees perform their jobs.		0.668	
Pay raises depend on how well employees perform their jobs.		0.651	
Promotions in my work unit are based on merit.		0.638	
In my work unit, steps are taken to deal with a poor performer who cannot or will not improve.		0.620	
Creativity and innovation are rewarded.		0.555	
Employees are recognized for providing high quality products and services.		0.555	
Proportion of variance explained	19.61%	16.29%	10.15%
Cronbach's alpha	0.9613	0.9564	0.9296

Because the federal government and FEVS data is hierarchically structured, I employ an HLM approach to this analysis. That is, since the federal bureaucracy inherently possess a hierarchical structure, with employees nested within agencies, a multilevel approach representing the true nature of the FEVS data is necessary in order to accurately measure significant relationships. Yet, prior public management research has failed to account for this multi-level issue by using conventional regression techniques, which treat either the individual or agency as the unit of analysis. Neither approach is satisfactory, however. Fortunately, HLM can be used to ameliorate such limitations by accounting for the clustering of observations (Raudenbush & Bryk, 2002). Clearly, then, the decision to use HLM in this analysis is justifiable, and adds methodological and theoretical improvements to the public management literature.

Before running the full HLM analyses, however, intraclass correlation coefficients were calculated to determine the proportion of variance in outcomes between agencies due to clustering effects. Estimations for variance between agencies relative to the dependent variables, 'quality of work produced' and 'accomplishing agency mission,' provided ICC values of 2.4 percent and 6 percent, respectively. Although these values are low and represent a small proportion of the explained variance, both ICC values are statistically significant ($p < .05$). Thus, given the theoretical importance of using a multilevel approach when investigating government bureaucracies and the statistical significance of the explained variance, I argue that HLM is an appropriate method for analyzing the data, despite the low ICC values.

As such, two models were run using HLM to test this study's theoretical expectations at the employee- and agency-level. The first model investigates the impact of the independent SHCM variables on the quality of work produced by agencies. The second model also tests the effects of the SHCM variables on an agency's ability to accomplish its mission.

Results

The results provided in Table 3 show that the SHCM variables of interest at the individual level are highly significant and positively associated with an agency's quality of work produced and ability to accomplish its mission. Additionally, in the first model, the individual level control variables preformed largely as expected. Education level and tenure were significant and positively associated with agency quality of work, whereas leave intention was negatively signed and significant. However, in the second model, the individual level controls did not prove to be as predictable. While education level and tenure exhibited an expectedly positive direction, education level failed to reach traditional levels of statistical significance. Even more surprisingly, leave intention was positively signed and not statistically significant in the second model. Finally, while I did not assign theoretical expectations for the remaining dichotomous controls for gender, supervisory, and minority status, each variable was statistically significant and held the same directional relationship in both models; specifically, while being female was positively signed and statistically significant, being a supervisor and minority was negatively signed and statistically significant.

At the agency level, however, results were far more surprising and generally did not conform to this study's theoretical expectations. In both models, the mean centered SHCM variable for direct supervision and general leadership reached statistically significant levels, but exhibited opposite directions in the two models. Similarly, the mean centered SHCM variable for performance incentives was oppositely signed in the two models; however, neither coefficient was statistically significant. In addition, agency size was not a statistically significant level two predictor in either model.

Table 3: Hierarchical Linear Modeling Analysis of SHCM Effects

Variables	DV1: Quality of Work	DV2: Accomplish Mission
<i>Employee Level</i>		
SHCM: Direct Supervisor	0.204*** (0.002)	0.086*** (0.002)
SHCM: Senior Leadership	0.172*** (0.002)	0.549*** (0.002)
SHCM: Performance Incentives	0.161*** (0.002)	0.058*** (0.002)
Female	0.039*** (0.003)	0.036*** (0.003)
Education Level	0.012*** (0.002)	0.002 (0.002)
Tenure	0.050*** (0.002)	0.003** (0.002)
Supervisor	-0.012*** (0.003)	-0.010*** (0.003)
Minority	-0.069*** (0.003)	-0.038*** (0.003)
Leave Intention	-0.041*** (0.003)	0.002 (0.003)
<i>Agency Level</i>		
Agency Size	0.000 (0.000)	0.000 (0.000)
Mean SHCM: Direct Supervisor	0.579*** (0.120)	-0.546** (0.242)
Mean SHCM: Senior Leadership	-0.375*** (0.071)	0.715*** (0.152)
Mean SHCM: Performance Incentives	0.009 (0.084)	-0.137 (0.162)
Constant	1.300*** (0.277)	1.487*** (0.560)
Observations	270700	270700
Groups	45	45
ICC	0.004	0.022

Standard errors reported in parenthesis. *indicates $p < 0.10$; **indicates $p < 0.05$; ***indicates $p < 0.01$

Discussion and Conclusion

I began with the observation that previous work had not demonstrated in a generalizable way that SHCM is meaningfully correlated with federal agency performance gains. I focused on agency performance in terms of quality of work and mission achievement, because these constructs are clearly linked to public sector performance in the literature (Becker & Gerhart, 1996; Selden, 2009, p. 32; Ingham, 2007). The results confirm that SHCM, exercised by direct supervisors, senior leadership, and through performance incentives, are positively associated with an agency's quality of work and ability to accomplish its mission at the employee level.

However, results at the agency level were far less conclusive. The SHCM performance incentive construct was not a statistically significant, and although the variables for SHCM exercised by direct supervisors and senior leadership were significant predictors, they presented opposing directional relationships in the two models. Thus, at the agency level, I found evidence that SHCM does not always have a significant and positive relationship with performance in terms of agency's quality of work and ability to accomplish their mission. Instead, I found evidence that SHCM may hold a significant, negative relationship with performance. At first blush, these results may be surprising, but it is plausible this suggests more comprehensive, agency-wide SHCM initiatives are less effective than those that are individually focused and tailored at the employee level. Put differently, these findings may imply that the effectiveness of SHCM is contingent on various contextual factors at different organizational levels. This postulation seemingly complements Jacobson and Sowa's (2015) assertion that in order for SHCM to be truly effective, its practices must align with organizational, mission, values and objectives. As such, this result may have important implications for managers already engaged in SHCM, especially given the fiscal costs associated with these initiatives (Jacobson & Sowa, 2015).

While I argue the results presented in this study are intriguing, more research is needed to allow confident conclusions to be drawn from them. For example, future research should investigate whether the relationship between SHCM holds among state and local governmental entities. I also argue that further research is necessary to determine the relationship between SHCM and performance constructs remains consistent over time through longitudinal analysis. Finally, future research should test the impact of SHCM, using dependent and independent variables that are not derived from the same dataset and that are not self-reported. This study is limited in this regard, and therefore, the potential for common methods bias is possible. Despite the shortcomings of this research, however, I argue that it nonetheless represents an early step in providing generalizable evidence that SHCM provides a significant payoff for public sector organizations that invest in it.

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