

# Government Relocation and Public Officials' Compassion: The Case of Sejong City

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**Abstract:** The Korean central government complex was relocated from Seoul, its capital city, to the newly constructed Sejong City in phases from 2012 to 2014. This study examines how the government relocation affects public officials' compassion. Applying a two-way fixed effect estimation to mitigate endogeneity, I find that public officials' sympathy declined significantly after the relocation and that certain management practices, such as a performance-related reward system, have exacerbated these negative effects. As a sympathetic attitude is a significant aspect of public service motivation and it positively related to government productivity, this study maintains that it is necessary for management to take heed of the disadvantageous effects of government relocation and attempt to address them.

**Keywords:** government relocation, Sejong City, compassion, government management, pseudopanel analysis, two-way fixed effect estimation

## INTRODUCTION

This study aims to answer how the relocation of central government offices influences public officials' compassion, which is a crucial aspect of public service motivation.

In South Korea, ministry-level central government agencies are located close together in a complex. The sites of these complexes include Seoul, the capital of South Korea, Gwacheon, a planned city established in 1982 in suburban Seoul, and Daejeon, where a government complex was built in 1997. Although the Daejeon

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government complex is in a local region, many central government agencies operated in metropolitan Seoul and Gwacheon for a long time, leading to concerns about imbalance in growth between the metropolitan and local areas.

Recognizing these problems, in 2002, former president Moo-hyun Roh announced a plan to construct a new administrative capital in the local district of Chungcheong. One of the purposes of this project was to prevent overcentralization in metropolitan areas and thereby achieve balanced economic development across local regions. After a series of time-consuming administrative/legislative processes and modifications, the Korean government finalized its plan to build the central administrative complex in a newly constructed city, called Sejong City, at a distance of 150 kilometers from Seoul (Lee, 2011). Sejong City was officially constituted in 2012. The government relocation followed a three-stage plan that took place from 2012 to 2014. Under the project, eighteen ministry-level central government agencies transferred to Sejong City in phases. Besides the agencies, eighteen affiliated public organizations and fifteen policy research institutes also relocated to the city. Figure 1 shows the location of the three government complexes.

**Figure.** Map of South Korea



Note: Seoul and Gwacheon is 1, Daejeon is 2, and Sejong City is 3. The distance between Seoul and Sejong is about 150 kilometers.

Many of the public officials who were transferred to Sejong City were severely and negatively affected by this relocation. Because Sejong City was an entirely new city built from scratch, there were many problems and much confusion, which led to complaints from public officials. For one, government employees were forced to choose between relocating to the new city or remaining in Seoul; if they chose the latter, then they risked a time-consuming commute as well as faced an unavoidable increase in cost of traveling to their job. A lack of urban neighborhoods and amenities in Sejong City made it difficult for employees to resettle. For another, though central government agencies transferred to Sejong City, other major agencies, such as the National Assembly and the Blue House, the president office, remained in Seoul. Immense administrative inefficiencies were inevitable because many government tasks are carried out within these organizations. The decision-making process is commonly followed by face-to-face communication in a strictly hierarchical culture, and public officials in the central government closely interact with the National Assembly and Blue House. Considering the unique features of the Korean government's workplace environment, the relocation to Sejong City could have been expected to affect various aspects of public officials' work. The implications of the relocation to Sejong City go beyond a mere physical move.

The extant literature highlights the essential role that compassion and sympathy play in public service and government productivity (Perry & Wise, 1990; Perry, 1996; Perry, 2011; Moynihan & Pandey, 2007; Anderfuhre-Biget, Varone, Giauque, & Ritz, 2010). Based on previous studies and Korean workplace characteristics, I assumed that public officials' sympathetic mindset would be affected by the construction of and relocation to the new government complex in rural Chungcheong.

Using a uniquely constructed pseudopanel dataset, my assumption was borne out. The results indicate that public officials' compassion declined significantly after the government's relocation to Sejong City and that the performance-related reward system intensified the negative effect of relocation on the sympathetic mindset. Because compassion is a crucial aspect of public service motivation and the government's productivity is positively related to public officials' public service motivation, caution should be taken when with respect to managerial reforms that emphasize performance in line with the New Public Management movement when public officials face unfavorable environmental changes.

The relocation issue is an ongoing process in South Korea. Because several public organizations such as the National Assembly and state-owned companies are expected to relocate to other local regions as well, I believe the rigorous empirical

analysis I offers here can pave the way for governments to restructure their relocation with smaller social costs. Understanding the effect of government relocation on public officials' attitude is a step forward in resolving the myriad concerns that arise with relocation. It is critical to explore channels through which negative effects of relocation on public officials can be alleviated.

The paper is organized as follows. Section 2 outlines the background of the study. Section 3 describes the dataset and empirical strategy. Section 4 presents the estimation results. Section 5 discusses the policy implications. Section 6 concludes the paper.

## **BACKGROUND OF THE STUDY**

In this section, I draw on contractual and practical perspectives relating to organizational behavior and use them to posit reasons why the Sejong relocation could have been expected to effect such organizational change for civil officials. I also consider the way relocation problems are likely to be exacerbated by the subsequent implementation of New Public Management strategies like performance-based payment systems. I then carefully examine how relocation can affect public officials by focusing on their affective mindset, which is a major pillar of public service motivation. Finally, I review the extant literature on the Sejong relocation and explain how this study contributes to the research.

### **Relocation as Organizational Change**

#### **The Contractual Perspective**

Social exchange theory understands the relationship between an organization and its members as a reciprocal contract. Employees, as members, work for their organization, which, in exchange, compensates them for their contribution. A violation of this reciprocal contract occurs when the members perceive that the organization has failed to fulfill its obligation. If the organization does not appropriately reward efforts, the members experience a feeling of anger, betrayal, and job dissatisfaction and conclude the mutual contract has been violated. This theory underscores the idea that recognizing and compensating an individual's contribution to the organization is critical if the organization wishes to maintain a good relationship between itself and its members (Morrison & Robinson, 1997; Gould-Williams & Davies, 2005; Knights & Kennedy, 2005). In general, organizations unilaterally

make decisions about workplace relocation without taking its members' thoughts into account. If an organization decides to relocate, its members must accept that decision and if they hope to keep their jobs, they will have to relocate whether they want to or not. Thus, compromises when it comes to one's personal life are inevitable.

Public officials in transferred organizations are considered passive agents and become targets of the reform. Thus, their concerns are dismissed. They generally have no choice but to accept the decision, even if the relocation significantly affects their personal lives. Further, despite the impact of government relocation on public officials' lives, the government rarely adequately compensates for the upheaval relocation causes. If they decide to move to the new region, they must navigate all resettlement issues independently, and if they choose to remain in the main city, they are solely responsible for the additional commuting costs and have to resign themselves to longer travel times and physical exhaustion. In any case, we can interpret this unfavorable environmental change as a violation of the mutual contract between the government as an organization and public officials as its members.

Studies note that reforms that make employees feel they have lost ownership and that induce uncertainty often aggravate the relationship between large-scale organizational changes and employees' attitudes (Pierce, Kostova, & Dirks, 2001; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Bordia, Hunt, Paulsen, Tourish, & Difonzo, 2004; Oreg, 2006; Choi, 2011). A government's relocation without a reciprocal agreement can compromise both employees' loyalty and work performance. Excluding public service employees from the reform process and forcing acceptance of organizational change on them without properly compensating them is likely to negatively affect their job commitment and satisfaction.

### The Practical Perspective

The extant literature reveals a spillover effect between work and family life (Greenhaus & Beutell, 1985; Bruck, Allen, & Spector, 2002). If an individual devotes too much time and physical/cognitive capacity to one or the other, the negative spillover between them increases. This problem has become more apparent in recent years, as a growing number of individuals today are seeking a balance between public and private life. A government relocation demands more emotional and physical commitment to work, often requiring a sacrifice in the domestic domain, which makes it difficult to fulfill familial obligations and therefore hard to maintain a work-life balance. It is plausible to assume that the psychological and

pecuniary costs of an involuntary relocation will negatively affect public officials' attitude (Fisher & Shaw, 1994; Martin, 1996; Moyle & Parkes, 1999; Choi, 2013).

Relocation not only may negatively affect the individual members of an organization but the organization as a whole. In the case of the South Korea government, first, completing administrative tasks requires any number of interactions with major agencies. Public officials are expected, for example, to attend numerous meetings with the members of the National Assembly or the president to coordinate policy legislation and execution. Thus, long-distance business travel between Seoul and a complex in a province outside the city could be expected to waste the resources of public officials, diverting them away from their principal tasks.

Second, although there are alternatives to making business trips for meetings, the government's activities rely on a certain amount of direct contact among stakeholders. Face-to-face communication is invaluable mode and cannot be fully replaced by other channels such as video conferencing (Ivancevich, Konopaske, & Defrank, 2003). Geographic distance between the central government agencies and other primary agencies is thus likely to lead to administrative inefficiencies.

Third, policy decision making takes place in the hierarchical environment of the government, which means that the development of policy and its execution are not easily implementable from government complexes outside of Seoul. Superiors and high-level officials need to sign off on all administrative decision-making processes, which is both time- and energy consuming. Studies indicate that the uptick in bureaucratic red tape caused by government relocation can negatively affect public officials' attitude (Bozeman, 2000; Moynihan & Pandey, 2007).

### **The Compounding Effect of New Public Management Strategies**

Public officials who were relocated to Sejong City experienced another exogenous shock on December 7, 2015, when the Ministry of Personnel Management announced the introduction of performance-based payment system that would take effect in 2016. This reform was instigated by the South Korean government's embrace New Public Management principles, which seek to address inefficiencies in bureaucracies by encouraging public sector companies to operate in line with free market competition (Lee, 2001).

However, New Public Management strategies such as incentive systems can have deleterious effects on public society, as a growing body of literature attests (Im, 2010). For instance, monetary rewards do not positively affect civil officials' work performance, and market-oriented measurements can induce psychological and physiological stress in public employees (Ganster, Kiersch, Marsh, & Bowen,

2011; Bellé & Ongaro, 2014; Bellé & Cantarelli, 2015). Moreover, incentive systems risk lowering public service motivation among public officials and pushing out intrinsically motivated employees (Anderfuhren-Biget, Varone, Giauque, & Ritz, 2010; Lee, 2012).

In the context of South Korea, it is noteworthy that the reforms to the performance-based payment system came on the heels of unwelcome and involuntary environmental change for those public servants who relocated to Sejong City. This type of shock no doubt magnified the physical inconvenience as well as psychological strain that civil officials who relocated experienced, which makes it necessary for public service organizations to find ways to prevent an erosion of public service motivation (Callan, 1993).

### **Public Officials' Acceptance of Organizational Change and Public Service Motivation**

A number of seminal studies have examined the factors that play in role in public officials' acceptance or not of organizational change, one of which is the extent of their public service motivation. Public service motivation is an intrinsic quality that predisposes individuals to want to serve the public's interest. It promotes actions that are deemed valuable for society. Perry and Wise (1990) were the first to introduce the widely accepted definition of public service motivation: "*an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations.*" Perry (1996) also suggests that public service motivation can be comprehensively measured by gauging an individual's attraction to public policy making, desire to serve the public interest, level of compassion, and willingness to make sacrifices.

Because public service motivation is a psychological trait that enhances public employees' acceptance of organizational transformation, a number of studies have argued that government capacity can be improved by enhancing public officials' public service motivation in various contexts (Moynihan & Pandey, 2007; Leisink & Steijn, 2009; Ritz, 2009; Paarlberg & Lavigna, 2010; Bellé, 2013; Wright, Christensen, & Isett, 2013; Kim, Jung, Seoh, & Im, 2019). The findings of empirical research emphasize that strong public service motivation is crucial to improving the quality of public service and organizational performance. Perry (2011) summarizes the significant role of public officials' motivation in their provision of public services and social welfare in an examination of over 100 studies conducted in more than twenty nations. Though numerous studies have examined the concept of public service motivation and its functions, Perry notes that scarce research has

been undertaken that connects compassion and individual/organizational performance through a focus on institutional characteristics that have a mediating effect. The influence of workplace relocation on a sympathetic attitude has received little attention, although impairments to such an attitude can substantially affect both public officials and society. The current study seeks to address this gap by exploring whether the effect of compassion on government productivity is undermined by the relocation of a government complex.

## **Literature Review**

In the Korean context, only a few studies have explored how the central government relocation to Sejong City has affected various aspects of public officials' work. Within this small corpus of research, Ryu and Hong (2013) find that public officials who relocated to Sejong City were less satisfied than before with their commute, workplace environment, work efficiency, and living environment. Hur, Kwon, and Cho (2015) claim that relocation to the Sejong City escalated the costs in communication and collaboration among central government agencies. Hur and Lee (2015) report that employees who transferred to Sejong City were more dissatisfied with their job than those who remained in Seoul because of the resulting work-life imbalance. An, Shin, and Lee (2017) note a similar result with respect to job satisfaction. They suggest that participatory decision making by public officials in government complexes outside of Seoul may alleviate such negative effects. Oh, An, and Lee (2017) propose using empirical evidence that a superior's leadership is significant in resolving job dissatisfaction among public officials in Sejong City.

In light of the notable limitations of the extant literature, this study seeks to make the following contributions. First, previous studies regarding the effects of relocation on employees have predominantly focused on job satisfaction. There exist no studies to my knowledge that examine the effect of relocation on sympathy and compassion, which are significant pillars of public service motivation. Insofar as public officials' affective mindset plays a significant role in enhancing administrative productivity and public welfare, an examination of this effect can complement the extant research by shifting the focus to the psychology of public employees.

Second, many studies rely on a one-year dataset and conduct a cross-sectional analysis. This method has an analytical drawback because it cannot control for unobserved heterogeneities across time and ministry. I overcome these disadvantages by merging several one-year datasets and implementing a pseudopanel analy-



sis (Deaton, 1985). In this way, my estimation captures ministry-level time-invariant unobservable characteristics.

The pseudopanel analysis adopted herein offers significant analytical advantages over cross-sectional analyses based on one-year datasets in the context of the current topic. First, the unit of analysis in this study is the ministry. Ministries persist over long periods of time, accumulating unique working cultures specific to their task and environments. Because these features can affect public officials' attitude, controlling for these unobserved characteristics through a fixed effect model is key to precisely estimating the relocation effect. Second, the decision to relocate delivered an exogenous shock to public officials who were asked to move. Public officials in the central government ordinarily do not transfer to private sector jobs or other agencies during their career, and so my analysis is not likely to be subject to an employee-level self-selection problem—that is, the employees who transferred and whose survey answers I use for my study likely did not want to move. By restricting the possibility of endogeneities, I am able to estimate the effect more precisely. Third, the government relocation took place in phases between 2012 and 2014. This fact enables me to apply a two-way fixed effect estimation across time and ministry.

To summarize, my empirical design systematically estimates the causal effect of relocation on public officials' compassion. Because government relocation as a policy can be interpreted to be orthogonal to other characteristics, the pseudopanel dataset alleviates concerns caused by unobserved time-invariant traits.

## **DATA AND ANALYSIS**

### **Data and Sample Construction**

I employ the Public Officials Perception Survey dataset constructed by the Knowledge Center for Public Administration and Policy at Seoul National University. Since 2009, it has been biennially documenting central government public officials' perceptions of current tasks, organizations, public policies, and social issues. Most questions are measured on a 5-point scale, from strongly disagree (1) to strongly agree (5). Around 500 to 1,200 public officials from the upper (3rd grade) to lower (9th grade) level participate in the survey each year. The study is designed as a face-to-face interview, but the survey is also administered via email and fax as well. It uses quota sampling based on ministry size and job level.

Though the extant literature that has employed this survey only uses one-year

datasets, I create a unique pseudopanel dataset that includes data from the 2009, 2011, 2013, and 2015 polls. Because the central government agencies have remained stable and the survey questions are similar over periods, I succeeded in merging them into a one-panel dataset, using the ministry to link them (Deaton, 1985). Thus, the dataset is constructed as a panel study at the ministry level.

This dataset has several advantages. First, the public officials surveyed each year are different, but they are repeatedly drawn from samples in the same time-stable cohort rather than from the same specific individuals. Thus, attrition problems are minimized compared with an individual-level true panel dataset. Second, I was able to control for time-invariant unobservable ministry-level traits, which can affect a variable of interest by exploiting the characteristics of a panel dataset. This becomes significant when I examine the relocation effect because each central government has established its own unique work culture over time.

Table 1 reports the summary statistics of personal characteristics in the samples and Table 2 reports the timing of relocation across central ministries.<sup>1</sup> About 70% of the samples are male, and most of them are between the age of 30 and 49. There are 9 grades; 5th grade is considered to be a beginning level as a manager in the government, and around 43% of the samples are 5th grade and above (Lee, 2003). Most of the respondents work in administrative service groups that specialize in general public tasks, and they have generally worked less than 20 years. Of the civil servants surveyed, 73% are married. As described in Table 2, the relocation began in 2013. Out of 25, 6 ministries were relocated to Sejong City in 2013 and 9 ministries transferred to the city in 2015. This difference is the main channel I exploit to infer the causal relationship between government relocation and public officials' sympathy. About 65% of the samples reported that they relocated to Sejong City in 2015.

For our variables of interest, compassion (measured by responses to the statement "I sympathize with the poor" in the survey) is 3.70 points across the years, which implies that public officials skewed in the direction of showing sympathy. The level of productivity (measured by responses to "What is the level of your productivity?" and "What is the level of your organization's productivity?" in the survey) is around 7.30 points.

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1. Though eighteen central government agencies were reported to have transferred to Sejong City, only fifteen ministries were identified as "relocated" in this study. This is because several ministries were integrated into one department based on their role and function after Guen-hye Park became president in 2013.

**Table 1.** Summary Statistics

		2009		2011		2013		2015	
		N	%	N	%	N	%	N	%
Sex	Male	372	75	609	72	536	64	842	67
	Female	126	25	241	28	302	36	408	33
Age	20-29	49	10	68	8	83	10	99	8
	30-39	206	41	319	37	364	44	553	44
	40-49	178	36	339	40	301	36	462	37
	50-	64	13	124	15	89	10	136	11
Job Level	5th Grade and Above (High Rank)	240	48	436	51	380	45	409	33
	6th Grade and Below (Low Rank)	259	52	414	49	459	55	841	67
Job Category	Administrative Service Groups	426	85	669	79	685	82	1017	82
	Technical Service Groups	51	10	142	16	119	14	204	16
	Other Groups	22	5	39	5	30	4	29	2
Career Year	0-9	-	-	334	40	406	49	569	46
	10-19	-	-	290	34	228	27	405	32
	20-29	-	-	169	20	179	21	241	19
	30-	-	-	57	6	23	3	35	3
Married	Yes	-	-	-	-	613	73	908	73
	No	-	-	-	-	225	27	342	27
Relocation (Relocation=1)		0		0		0.2563		0.6480	
Compassion (5-Point Scale)		3.6733		3.6153		3.6447		3.8191	
Individual Productivity (10-Point Scale)		-		6.9765		6.9857		7.8220	
Organizational Productivity (10-Point Scale)		-		7.0176		6.9690		7.9532	

Note: The average value of total samples (year of 2009 to 2015) for compassion, individual productivity, and organizational productivity is 3.7050, 7.3369, and 7.3990, respectively.

**Table 2.** Government Relocation, 2009-2015

Ministry	2009	2011	2013	2015
Ministry of National Defense	Seoul	Seoul	Seoul	Seoul
Financial Services Commission				
Korea Communications Commission				
Defense Acquisition Program Administration				
Ministry of Justice				
Military Manpower Administration				
Ministry of the Interior and Safety				
Ministry of the Gender Equality and Family				
Ministry of Foreign Affairs				
Ministry of Unification				
Anti-Corruption and Civil Rights Commission	Seoul	Seoul	Seoul	Sejong
National Tax Service				
Ministry of Government Legislation				
Ministry of Health and Welfare				
Ministry of Employment and Labor				
Ministry of Education, Science and Technology				
Ministry of Patriots and Veterans Affairs				
Ministry of Culture, Sports and Tourism				
Ministry of Trade, Industry and Energy	Seoul	Seoul	Sejong	Sejong
Korea Fair Trade Commission				
Office for Government Policy Coordination				
Ministry of Land, Transport and Maritime Affairs				
Ministry of Strategy and Finance				
Ministry of Agriculture and Forestry				
Ministry of Environment				

Note: The name, function, and organizational structure of the central government agencies underwent changes when the former president Geun-hye Park was newly elected in 2012. Still, the overall administrative structure remains the same, and I code the reconstructed central governments agencies as follows based on their history, role, and function: (1) Ministry of the Interior and Safety (=Ministry of the Interior + Ministry of Personnel Management + Ministry of Public Safety and Security), (2) Ministry of Land, Transport and Maritime Affairs (=Ministry of Land, Infrastructure and Transport + Ministry of Oceans and Fisheries), (3) Ministry of Education, Science and Technology (=Ministry of Education + Ministry of Science, ICT and Future Planning).

## Empirical Design

I apply a fixed effect estimation framework using two dimensions: time and ministry. The basic equation is as follows:

$$Y_{i,j,t} = \beta T_{i,j,t} + \gamma X_{i,j,t} + \delta_t + \lambda_j + \epsilon_{i,j,t}$$

where  $i$  is a public official,  $j$  is  $i$ 's affiliated ministry-level government agency, and  $t$  is a year ranging from 2009 to 2015.

For the dependent variable  $Y_{i,j,t}$ , I rely on responses to the statement "I sympathize with the poor" in the survey, which is designed to capture one specific aspect of public service motivation: "compassion and self-sacrifice" (Perry, 1996). It is measured on a 5-point scale, from strongly disagree (1) to strongly agree (5).

The treatment variable  $T_{i,j,t}$  is equal to 1 if the public official  $i$ 's ministry  $j$  transferred to Sejong City at  $t$ . This variable can be interpreted as an exogenous shock, through which I alleviate an individual-level self-selection issue. This helps mitigate possible self-selection bias because public officials in the central government often work for the same ministry throughout their career. They do not transfer across government agencies or exit to private sectors. Indirect evidence in Table 3 indicates that about 75% of public officials do not intend to change their job.

**Table 3.** Job Change Intention among Public Officials

	2009	2011	2013	2015
Strongly Disagree	118	226	317	453
Disagree	258	429	322	457
Neutral	100	165	107	201
Agree	18	24	68	94
Strongly Agree	5	6	21	44

Note 1: The questionnaire asks "I will find a new job in a few years."

Note 2: The portion of respondents that have little intention changing jobs (strongly disagree and disagree) is 75%, 77%, 77%, and 74% in 2009, 2011, 2013, and 2015 respectively.

An individual's level of compassion may depend on personal traits and socio-economic status, such as gender, age, and job characteristics (DeHart-Davis, Marlowe, & Pandey, 2006; Dutton, Workman, & Hardin, 2014). Thus, I include sex, age, job level, and job category as the categorical variable in  $X_{i,j,t}$ , which is cor-

related to our variables of interest. I also add two fixed effects:  $\delta_t$  and  $\lambda_j$ . The time fixed effect  $\delta_t$  controls for a common time trend, whereas the government-level fixed effect  $\lambda_j$  captures the government's time-invariant unobservable characteristics. This term reflects the workplace culture that each central government agency has developed over time. For instance, the Ministry of Strategy and Finance (renamed the Ministry of Economy and Finance in 2018) is recognized for its diligent, competitive, and strict hierarchical environment, and a larger portion of its employees are 5th grade (deputy director) or above. In contrast, other central governments such as the Ministry of Government Legislation are known for making possible for public officials to create a better work-life balance. Most of the higher-up employees in this ministry are 6th grade (assistant director) or below. Because these different features can affect public officials' attitude and mindset, controlling for the fixed effect is essential to precisely estimating the treatment effect, which is one of the central contributions this study makes to the extant literature.

## Estimation Result

Table 4 reports the main results. When I include all covariates and fixed effects, the level of compassion decreases by -0.1658 points (column 3). Because the average value of compassion is 3.70 points among public officials, I calculate a 4.5% decline in compassion after the government relocation. Also, controlling for the fixed effects moves the coefficient from a negative (columns 1 and 2) to a positive (column 3) value.<sup>2</sup>

Under the New Public Management, the government has implemented a reform that underscores visible performance by employees. It includes policies such as performance-based pay. However, studies suggest that managerial reforms that place an emphasis on extrinsic incentives may compromise public officials' compassion (Anderfuhren-Biget, Varone, Giauque, & Ritz, 2010). Involuntary relocation to Sejong City by itself increased job dissatisfaction among public officials, and so it is plausible to posit that their sympathetic attitude will be put in jeopardy when coupled with the performance-related reward system. In order to explore this hypothesis, I consider two aspects of the performance-related reward system: bene-

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2. Suppose an econometric design is given by  $y = \beta T + u + \epsilon$ , where  $T$  is a treatment, and  $u$  is an unobserved heterogeneity. Then,  $\hat{\beta} = \beta + E[(T'T)^{-1}(T'u)] + E[(T'T)^{-1}(T'\epsilon)] = \beta + E[(T'T)^{-1}(T'u)]$ , with a common assumption of  $T \perp \epsilon$ . If the fixed effect yields a larger coefficient than the ordinary least squares ( $\hat{\beta} < \beta$ ), then  $\text{cov}(T, u) < 0$ . Thus, negative correlations obtain between the policy and unobserved heterogeneities.

fits and penalties. For benefits, I draw on responses to the statement “My promotion depends on my work performance,” and for loss, I use responses to the statement “My organization rightly imposes a penalty on employees who are incompetent in their work.” Both questions are measured on a 5-point scale, from strongly disagree (1) to strongly agree (5).<sup>3</sup>

**Table 4.** Regression Result on Compassion

	Dependent Variable: Compassion				
	(1)	(2)	(3)	(4)	(5)
Sejong Relocation	0.0251 (0.0409)	0.0419 (0.0409)	-0.1658** (0.0533)	0.0422 (0.1152)	0.0990 (0.0791)
Reward (Benefit)	-	-	-	0.0912** (0.0189)	-
Relocation × Benefit	-	-	-	-0.0658* (0.0306)	-
Reward (Loss)	-	-	-	-	0.0472* (0.0222)
Relocation × Loss	-	-	-	-	-0.0906** (0.0261)
Covariates	Not Controlled	Controlled	Controlled	Controlled	Controlled
Year Fixed Effect	Not Controlled	Not Controlled	Controlled	Controlled	Controlled
Ministry Fixed Effect	Not Controlled	Not Controlled	Controlled	Controlled	Controlled
R <sup>2</sup>	0.0003	0.0071	0.0344	0.0427	0.0377
N	3434	3426	3426	3425	3423

Note 1: Standard errors in parentheses, \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Note 2: I use “I sympathize the poor” as the dependent variable to measure compassion. I use “My promotion depends on my work performance” as one interacting variable to measure benefit and “My organization rightly imposes a penalty on those who are incompetent in their work” an another interacting variable to measure loss. They are measured on a 5-point scale from strongly disagree (1) to strongly agree (5).

Note 3: Covariates include sex, age, job level, and job category. They are controlled for as a dummy variable in the regression.

3. Specifically, the estimation equation is  $Y_{i,j,t} = \beta(T_{i,j,t} \times S_{i,j,t}) + \gamma X_{i,j,t} + \delta_t + \lambda_j + \epsilon_{i,j,t}$ , where  $S_{i,j,t}$  represents public official  $i$ 's evaluation of two questions: “My promotion depends on my work performance,” and “My organization rightly imposes a penalty on employees who are incompetent in their work.” In the estimation, I apply  $S_{i,j,t}$  as the continuous variable. The variable of interest is the coefficient of the interaction terms,  $\beta$ .

The result is as expected. The benefit that accrues from better performance reinforces the negative effects of relocation on compassion. Public officials are becoming less sympathetic toward the poor: the level of compassion decreases by 0.0658 points (column 4). Column 5 represents the case wherein I change the reward variable into the punishment variable. Again, I witness a similar outcome. The level of compassion decreases by 0.0906 points. My estimation results demonstrate that public officials' compassion declined significantly after the government relocation to Sejong City. Further, the performance-related reward system is strengthening this negative effect.

## Discussion

The extant literature has clearly shown that inefficiencies increased after the government relocated to Sejong City. In the dataset, I find preliminary evidence to prove that the government relocation may be negatively affecting the productivity of public officials and the organization. The 2013 survey reveals how overall administrative productivity and working styles have changed.<sup>4</sup> The statistics in Table 5 indicate that work inefficiency increased and working styles changed to accommodate alternatives to face-to-face interaction, such as using cell phones or smart work centers. It implies that the quality of government products such as reports may deteriorate due to a lack of direct contact among officials and inefficient communication methods.<sup>5</sup> Thus, we can infer that that government productivity should decrease due to the relocation to Sejong City.

To speculate how the change in public officials' sympathy affects government productivity, I draw on the 2011, 2013, and 2015 surveys, which include the questions "What is the level of your productivity?" and "What is the level of your organization's productivity?" These questions are measured on a 10-point scale, from lowest (1) to highest (10). I use these questions to estimate whether compassion is related to government productivity.<sup>6</sup>

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4. Subjects of the 2013 survey were civil officials whose affiliated ministry transferred to Sejong City.

5. The following news article illustrates work inefficiencies caused by the relocation to Sejong City: "Government Officials in Sejong City Suffering from Inefficiency," *Korea Times*, August 8, 2016.

6. The estimation equation is  $P_{i,j,t} = \beta Y_{i,j,t} + \gamma X_{i,j,t} + \delta_t + \lambda_j + \epsilon_{i,j,t}$ , where  $P_{i,j,t}$  is the level of productivity evaluated by public official  $i$  in department  $j$ , whereas  $Y_{i,j,t}$  is the level of compassion, measured using the question "I sympathize with the poor." Other variables are the same as the variables in the basic estimation.



**Table 5.** Preliminary Evidence of Government Inefficiency due to Relocation

Variable	Value
Overall Productivity	1.6744
Face-to-Face Briefing	2.4419
Phone Briefing	3.6651
Email Briefing	3.7953
Messenger Briefing	3.8651
Smart Work Center	3.7116
Video Conference	3.4000
Commute Time	3.4065
Business Travel Time	4.4159
Business Travel Frequency	3.8832
Business Travel Cost	4.3146
Overtime Work Frequency	3.0794
Physical Exhaustion	4.1028
Overall Living Cost	4.1916
Interactions with External Agencies	2.8178
Interaction with Customers	2.5748
N	215

Note: Questionnaire statements are measured on a 5-point scale, from strongly decreased (1) to strongly increased (5).

Table 6 shows that public service motivation is positively related to individual and organizational productivity. In all specifications, the compassion index is strongly correlated to individual and organizational performance. The increase in compassion is reflected in a 0.22-0.30-points increase in government productivity. Considering that the average level of productivity is gauged at 7.30 points (see Table 1), this represents around a 3-4% increase.

**Table 6.** Regression Result on Productivity

	Dependent Variable: Individual Productivity			Dependent Variable: Organizational Productivity		
	(1)	(2)	(3)	(4)	(5)	(6)
Compassion	0.2951**	0.2949**	0.2183**	0.2855**	0.2937**	0.2280**
	(0.0580)	(0.0594)	(0.0613)	(0.0551)	(0.0546)	(0.0531)
Covariates	not controlled	controlled	controlled	not controlled	controlled	controlled
Year FE	not controlled	not controlled	controlled	not controlled	not controlled	controlled
Ministry FE	not controlled	not controlled	controlled	not controlled	not controlled	controlled
R <sup>2</sup>	0.0192	0.0635	0.1567	0.0173	0.0420	0.1737
N	2924	2918	2918	2921	2915	2915

Note 1: Standard errors in parentheses,  $^+p < 0.10$ ,  $^*p < 0.05$ ,  $^{**}p < 0.01$ .

Note 2: I use "What is the level of your productivity?" as the dependent variable to measure individual productivity, and "What is the level of your organization's productivity?" as the variable to measure organizational productivity. They are measured on a 10-point scale.

Note 3: Covariates include sex, age, job level, and job category. They are controlled for as a dummy variable in the regression.

In their seminal work, Perry and Wise (1990) underscore that higher level of public service motivation is linked to a greater likelihood of better performance and more ethical behavior in public agencies. A lower level of compassion on the part of public officials can thus jeopardize individual and organizational productivity. It can also affect the government's general performance in policy making and policy implementation. Therefore, the negative effects of government relocation on public officials' sympathy should be taken seriously. Proper countermeasures are necessary on the administrative front.

## CONCLUSION

The relationship between organizational change and public employees' attitudes is closely intertwined. Examining the effect of these attitudes is a critical area of research in public policy. It is imperative to empirically analyze how the construction of Sejong City and relocation of central government agencies there affect the psychology of public officials who are also forced to relocate and resettle.

In this paper, I focused on one major trait of public officials: compassion and

examined how the government relocation to Sejong City has affected public officials' sympathy by applying a two-way fixed effect estimation. I found that the level of sympathetic mindset decreased after relocation to Sejong City. Moreover, the performance-related reward system aggravated this negative effect.

Because compassion is positively related to individual and organizational productivity, improving the quality of government depends on encouraging both intrinsic motivation and mitigating work inefficiencies. To this end, measuring how well public officials foster apprenticeships through direct contacts and transforming working styles through advanced IT would be necessary. Also, this study suggests minimizing the negative effects of government operations by adopting a more cautious approach to managerial New Public Management reforms that create unfavorable environmental changes for public officials.

Examining the effects of relocation effect from perspectives other than that of public officials would be helpful as well. For example, recent studies have revealed that isolated capital cities are associated with a worse quality of governance and less accountability (Campante & Do, 2014; Campante, Do, & Guimaraes, 2019). Moon (2018) similarly argues that a hub city in a local area offers an opportunity to achieve locally balanced growth. For these reasons, I believe that more diverse and rigorous studies on the effects of relocation should be conducted in the hope of generating better policy suggestions as to how to manage government complexes outside of Seoul, as a number of governmental agencies are expected to relocate to local regions.

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