

The effects of seniority-based HRM systems on perceived fairness and job satisfaction after NPM reform in Japan

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Abstract: This study of Kawanishi city, Japan, using survey data collected before and after the 2016 amendment to the Local Public Service Law, was conducted to provide empirical evidence to elucidate negative effects of traditional seniority-based human resource management (HRM) practices on the motivations of organizational officials. Results of the empirical analysis revealed that the intrinsic motivation of public officials to perform their jobs does not remain unaffected by external rewards, but motivation is particularly affected by factors other than pay. Specifically, the promotion system and work performance were evaluated. Additionally, results show that effects of perceived fairness in terms of pay levels, promotion mechanisms, performance appraisals, and the distribution of work on the intrinsic motivation of public officials to perform their jobs is greater in organizations that continue to use a traditional seniority-based HRM system rather than a performance-based HRM system. Before the 2016 amendments to the Local Public Service Law, Japanese local governments had been using a seniority-based HRM system that did not differentiate employees in terms of treatment, but if difficulties are inherent in such non-performance-based HRM, a need exists to remedy them. If the traditional personnel management system is left in place, then perceived fairness in personnel treatment will not be enhanced, leading to difficulty for public servants to be intrinsically motivated to perform their duties. For public officials who have long been subjected to traditional seniority-based and egalitarian treatment, a new performance-based HRM system might ensure greater perceived fairness in how workers are rewarded for their performance.

Keywords

job satisfaction, NPM reform in Japan, perceived fairness, performance-based HRM, seniority-based HRM

Introduction

In recent years, performance-based HRM has been increasingly adopted in public sector organizations in Japan and in many countries. One reason for this phenomenon is reform policies emphasizing New Public Management (NPM), which has been implemented in many countries worldwide, especially in Anglo-Saxon countries. Under NPM reforms, the public organization goals are changing to become more result-oriented. A search is underway for methods of motivating public officials to work toward adoption of job behaviors that engender customer satisfaction and improved organizational performance, and how to motivate employees to achieve result-oriented organizational goals. To achieve these objectives, it has become necessary to introduce personnel policies that increase the strength of incentives in terms of external rewards for organization members.¹

According to earlier studies undertaken in the field of public administration, public officials should have a sense of mission to serve the public welfare in the first place (e.g., Behn, 1995; Buchanan, 1975; Perry and Porter, 1982; Perry and Wise, 1990; Rainey, 1982; Romzck, 1990; Terry, 1998). In addition to this sense of mission, another factor that presumably affects the supply of labor to the public sector is the existence of intrinsic motivation of individual public officials related to the nature of public service itself. It has been pointed out that behind such labor supply decisions of public officials is the existence of a normally unobservable motivation called "public sector motivation (PSM)" (e.g., Crewson, 1997; Feeney, 2008; Houston. 2000, 2006), 2000, 2006). This motivation suggests that public officials are less responsive to monetary rewards. In fact, an earlier study supports the view that they are less extrinsically motivated than private sector firm employees (Buelens and den Broeck, 2007).

In Japan, extrinsic motivation with increased incentive strength has not been implemented under seniority-based HRM systems for a long time. Therefore, the linkage between the short-term performance achievement of individual public officials and their pay levels is not necessarily guaranteed. If this sense of stagnation in HRM adversely affects the sense of fairness about their treatment, then the introduction of performance-based HRM with high

¹ Public officials working in organizations will be referred to herein as members. The two terms might be used without distinguishing between them.

incentive intensity might be positively accepted, depending on how it is implemented, even among public officials who are regarded as less responsive to monetary rewards.²

Some earlier studies conducted in the field of public administration have examined whether performance-based HRM for public officials has a positive effect on their performance (e.g., Giauque et al., 2013; Lee, 2017; Williams, 2004). Lee (2017) conducted an empirical analysis using survey data of U.S. federal government officials, noting that motivational effects are greater for officials who perceive performance appraisals as fair and who are satisfied with post-appraisal feedback, and noting that performance-based HRM has a positive effect on the intrinsic motivation of public officials. Giauque et al. (2013) conducted an empirical analysis using survey data of public officials in a Swiss cantonal government. The study results point out that HRM practices such as fairness, job enrichment, performance appraisal are antecedents to shaping the PSM of individual public officials. They might be regarded as strong predictors of perceived performance.

A review of earlier studies, including those of adjacent fields of management and psychology, indicates that performance-based HRM is more likely to be perceived as fair and equitable in terms of compensation distribution outcomes and processes than egalitarian or seniority-based HRM (Colquitt, 2001; Greenberg, 1986; Iqbal et al., 2015). However, in the fields of management and psychology, there is apparently no small amount of controversy about whether extrinsic motivated systems, such as performance-based HRM and performance appraisal, have a positive or negative effect on intrinsic motivation (e.g., Deci, 1976; Deci et al., 1999; Deci, 1976; Deci, Koestner and Ryan, 2001; Kohn, 1993; Sansone and Harackiewicz, 2000).

Although many earlier studies have provided some evidence of the positive effects of performance-based HRM on organizational members, there is little evidence elucidating the effects on organizational members if performance-based HRM is not implemented and if traditional HRM practices continue. Particularly as NPM reforms progress in Japan and organizational goals become more performance-oriented, if the performance of public

² In Japan, the 2016 amendment to the Local Public Service Law prompted many local governments to introduce performance-based HRM systems instead of seniority-based HRM systems. However, in line with the purpose of decentralization, the head of each local government ultimately decides what type of HRM to implement. In fact, in some municipalities, there are not a few cases in which traditional seniority-based HRM systems continue to be used.

officials is not properly evaluated under the traditional seniority-based HRM system, then the reforms are likely to have a considerable effect not only on the sense of fairness in terms of treatment but also on intrinsic motivation of employees for their jobs.

This study was conducted to provide empirical evidence about the negative effects of traditional seniority-based HRM practices on the motivation of organizational members. The study used data from a survey conducted continuously in Kawanishi city, in which is in midwestern Japan, before and after the 2016 amendment to the Local Public Service Law. Moreover, the study was undertaken with knowledge of the problematic status of existing research discussions in the field of public administration. In doing so, we discuss and draw upon recent findings of studies undertaken in the fields of business administration and psychology.

Background of this Study

Changes for New HRM system in Japanese local governments

In this section, recent trends in HRM in Japanese local governments are discussed to the extent necessary. To date, the HRM systems of Japanese local governments have been egalitarian and seniority-based. They have adopted a "slow promotion" policy that includes an assumption of lifetime employment. It has been pointed out that this has been aimed at maintaining cooperative relationships among organization members and has been aimed at maintaining their motivation based on an excessive sense of competition and a desire to achieve performance (Inatsugu, 2001). Public organizations are typical bureaucracies. The principle of treatment for Japanese public officials is based on merit and performance. However, because competence and performance cannot be proven until one is actually employed in a job position, and because the measurement scale is not clear, we had to regard years of work experience as a proxy indicator of competence and performance. Consequently, in the past, promotion, advancement, and pay increases were determined by seniority (Oota, 2013).

However, momentum for HRM reform has been growing in the 21st century, flanked by the spread of performance-based HRM in the private sector around 2000 and the popularity of NPM in Western countries (e.g., Oota, 2013; Kuroda, 2016). Performance-based HRM is a

concept that attempts to introduce a kind of market or competitive principle into an organization and was adopted by many private companies in the 1990s and 2000s (e.g., goal management, annual bargaining system, role-based pay, performance-based bonuses). However, several private companies rapidly withdrew or drastically revised their systems after their introduction in Japan. The main reason for this change was dissatisfaction and a sense of unfairness among employees associated with excessive differences in personnel management treatment.

In Japan, since the 2016 amendment to the Local Public Service Law, performance-based HRM, in which public officials are given flexible treatment based on the results of performance evaluations from an early stage in their careers, has been widely adopted by local governments. One major point of the amendment of the Local Public Service Law in 2016 is that it mandates the use of personnel evaluation as a basic resource for HRM of public officials (Kuroda, 2016). However, four difficulties have been pointed out when introducing the performance-based HRM system to the public sector: (1) the collective job system based on the "big room" principle, (2) the security of status and the fixation of the workforce, (3) the special characteristics of the purpose of the public sector and the difficulty in setting a measurement scale for performance, and (4) the fact that the source of remuneration is tax receipts by government (Oota, 2013).

Table 1 provides a summary of the use of the personnel evaluation results in each municipality following the 2016 amendments to the Local Public Service Act. Regarding the use of the personnel evaluation system, it can be reflected in pay raises, which means a base increase in remuneration every year, in bonuses paid in June and December, and in promotions or demotions. However, under the decentralization of power, a decision on the use of personnel evaluation results is made by the head of each local government. Therefore, not all municipalities uniformly used personnel evaluation for such personnel management at the timing of 2016, when the Local Public Service Law was revised. After 2016, the number of organizations using personnel evaluation results in the personnel treatment of public officials increased gradually.

Table 1 Here

Aspirations for a New Performance-Based HRM

Kawanishi city, the target of the survey research in the empirical analysis of this study, is a municipality in Hyogo prefecture, located in midwestern Japan. The population of Kawanishi city was 156,400 as of 2015. Its main industries are retail and lifestyle-related services. Kawanishi city is located on the border of urban areas of Osaka prefecture, making it a major economic zone in western Japan, centered on Osaka.

The Results of the questionnaire survey of the HRM system in Kawanishi city are shown in Table 2.³ In Kawanishi city, the results of performance evaluations have not been reflected in pay raises, bonuses, promotions, or demotions since amendment of the Local Public Service Law in 2016.

The table shows that around 70% of all officials generally responded with "Yes" or "Somewhat Yes" to questions A "Do you think that you receive pay with your work content and responsibilities?" and C "Do you think that your abilities, work attitude and achievements are fairly evaluated?". However, for question B, "Do you think the current promotion system is appropriate?", only about 50% of the officials answered "Yes" or "Somewhat yes". As described already, performance-based HRM has not been introduced in Kawanishi city, so the current promotion system in this question would mean a seniority-based HRM system.

Furthermore, examination of details in the responses to these questions, broken down by age group, provides the following insight into the feelings of officials of this organization toward this seniority-based HRM system. In Question B, as the age of the respondents increases from their 20s to 50s, the percentage of those who answered "agree" or "somewhat agree" tends to decrease. Conversely, the percentage of those who answered "not really agree" or "disagree" tends to increase. Similarly, in Question C, as the age of the respondents increases from their 20s to 50s, the percentage of those who answered "agree" or "somewhat agree" tends to decrease. Conversely, the percentage of those who answered "disagree" or

³ Kawanishi city has been conducting an annual job satisfaction survey as part of its management quality improvement activities. No report in the relevant literature describes a survey with similar questions outside of these local governments, which makes the survey data valuable for analyzing the state of HRM in Japan before revision of the Local Public Service Law. The following URL provides relevant details
<URL: <https://www.city.kawanishi.hyogo.jp/shiseijoho/gyozaisei/1003742/1003762/index.html>> (Refer to July 3, 2021)

"not really agree" tends to increase. Question A does not show this trend. Of particular interest is the fact that a high percentage of older officials, who are presumed to be treated favorably under the seniority-based HRM system, do not consider the current system of promotion to be appropriate. In addition, a high percentage of older officials do not feel that their abilities, work attitudes, and achievements are fairly evaluated.

In light of the discussion presented above, one can infer that some difficulties might exist with the traditional seniority-based HRM system, especially in the mechanism for promotion and evaluation. Therefore, we can confirm how they feel about the promotion system with question D, "What do you think should be the most important aspect of the promotion system?". The most desirable criterion for promotion was ability and performance (62.2%), which was much higher than seniority (14.1%), promotion examinations (13.2%), and the intention of the head of the department (6.6%). Although the results of this survey are based on the case of Kawanishi city, they suggest that not a few local government officials in Japan might be in a situation where they are eager to introduce performance-based HRM. One can also note from responses to this question that the percentage of respondents who responded that the seniority-based HRM system should be followed is highest among respondents in their 20s. This percentage decreases as the ages of the respondents increase, which can be regarded, at first glance, as a strange phenomenon.

Table 2 Here

Looking at traditional modes of HRM in Japanese local governments, the criteria for distribution of pay have operated using a seniority-based HRM system based on years of employment after hiring. The specifics of the personnel evaluation were not made known to the evaluators, nor were the evaluation results used to improve their job performance and growth. Therefore, probably it was system that made it difficult to evaluate one's own performance or the degree of one's contribution to the organization that set performance-oriented goals.

As presented in Table 1, the working environment of local government officials in Japan has differed depending on whether or not performance-based HRM was introduced in their

organizations after revision of the Local Government Officials Act. These changes might affect the sense of fairness in personnel treatment. In the past, traditional HRM systems were more egalitarian and seniority-based, which might have led to some stagnation of management. If this type of problem is not improved in an organization, then it might engender changes in their perceived fairness in personnel treatment or job motivation.

As NPM reforms have progressed in Japan, organizational goals became more customer-oriented and performance-oriented. At the same time, they must be compatible with the needs and values of public officials during evaluation of their performance. In fact, the survey results for Kawanishi city, where performance-based HRM has not yet been introduced, show that many officials want to see the introduction of a competency-based and performance-based HRM system. Nevertheless, if the HRM system continues to be seniority-based, then organizational members will perceive a sense of unfairness in the way HRM is managed that is not based on performance. This sense of unfairness might affect their intrinsic motivation for work.

Effects of NPM reform on the way HRM is conducted

As described in Section 1, as the neoliberal trend spread in the 1980s, a significant change was found in the way public organizations were managed in terms of improving organizational performance, especially in Anglo-Saxon countries and continental European countries (Bach and Kessler, 2007). Earlier studies (Hood, 1991; Naschold, 1996) have pointed out that the main characteristics of NPMs, modeled on competitive private firms, include the following: (1) Management by individual goals rather than hierarchical structures, (2) Differentiation of organizations by services provided rather than by function, (3) Emphasis on results rather than processes, (4) Emphasis on external customers (residents) rather than internal rules, (5) Emphasis on frugality when using resources, (6) Streamlining of organizations through outsourcing to the private sector, and (7) Active introduction of private sector management methods.

An HRM system under the NPM reform introduced in the context of these changes tends to regard the voice of the customer as a user of government services (feedback), and good or bad communication to customers as the performance of public officials. Under NPM reform, the

way in which public officials perform their roles is defined by the public organizations that employ them. Their progress is monitored. The professional behavior of public officials will also be disciplined and controlled by the will of their customers: the local residents. However, what residents want from public organizations and public officials is diverse, ambiguous, and variable. What is required of public officials to capture the needs of citizens are nuanced skills such as communication skills. After NPM reform, public officials are expected to be constantly aware of customer trends as they perform their duties. In addition, attention will be devoted to communication between evaluators and evaluatee to ensure appropriate performance evaluation and compensation allocation.

In this way, the question of how to motivate officials to achieve the desired results of the organization has become an important issue in NPM reform. The traditional HRM system has become inadequate to address such difficulties. A need exists to refine HRM system in terms of how to improve the motivation of public officials, while referring to privatization and management methods of private companies. Performance-based HRM is regarded as an effective means of achieving this objective.

Performance-based HRM refers to a set of activities to improve the performance of organizational members. To maintain the motivation of organizational members to achieve performance and to enhance their capabilities and performance, performance must be well defined, measured, and reflected appropriately in compensation. In addition, both the evaluator and the evaluatee must understand the origins and actual implementation of such procedures. Both must agree on them. Performance appraisals enable organizational members to make them aware of and practice the competencies, behaviors, and outcomes that engender high performance, and ultimately, outcomes that determine rewards (Locke et al., 1980).

A review of earlier research in the fields of management and psychology suggests that the presentation of external rewards such as economic rewards for work, can easily engender intrinsic motivation, such as a sense of significance, enjoyment, and even job satisfaction in engaging in work. Members of the organization will regard the job in which they are engaged as a means to obtain a higher level of external rewards. They will be intrinsically motivated to find reasons to engage in the job from the job itself. This positive effect of external rewards on intrinsic motivation is called the "enhancing effect". When this "enhancing effect" exists,

HR policies with strong incentive strength, such as performance pay and performance appraisal, will meet the expectations of the organization that introduced them (e.g., Deci, 1976; Deci, Koestner and Ryan, 2001). The "enhancing effect" is thought to occur when organization members who are subjected to rewards and performance evaluations with high incentive intensity receive feedback on the size and competence of the role they have played proactively through rewards and evaluations. In this case, despite the existence of extrinsic motivational mechanisms, organizational members will maintain or even enhance their tendency to be motivated by attractive job descriptions that evoke a sense of self-determination and competence. For organization members, the external rewards are also important because they provide information about themselves and their relation to the job.⁴ Based on the discussion presented above, the following three hypotheses can be derived.

Hypothesis 1: Greater satisfaction of public officials with their received pay level is associated with greater intrinsic motivation.

Hypothesis 2: Public officials with stronger feelings about the propriety of an organization's promotion system have greater intrinsic motivation.

Hypothesis 3: Public officials who are more satisfied are with their performance evaluation have greater intrinsic motivation.

Sense of fairness in personnel treatment

In general, as compensation for their labor, organization members enter into what is implicitly called a "psychological contract" (Schein, 1980) with the organization, related to the overall HRM system, including the pay level, promotion, and advancement overall.⁵ Of all factors that can create, fulfill, alter, or violate this psychological contract, the

4 However, it is also possible that external rewards produce no "enhancing effect", but rather the opposite. This effect is an "undermining effect" (e.g., Deci et al., 1999; Kohn, 1993). In this case, it has been suggested that external rewards can undermine the intrinsic motivation of members to perform their jobs, thereby undermining their voluntary behavior, as well as their job performance and innovative behavior (e.g., Deci, 1976; Sansone and Harackiewicz, 2000).

5 The term "psychological contract" refers to a situation in which both the worker and the organization entering into an employment contract expect and understand, almost implicitly, many things about each other's obligations to fulfill (Rousseau, 1995). The psychological contract concept is pointed out not only in business administration, but also in the field of public administration and public management theory.

characteristics of the HRM system include important policies and issues that are positioned at the center of the employment relationship (Rousseau and Ho, 2000).

For members who work in an organization every day, the fundamental feelings that support their motivation in the workplace arise from their relative relationships with their co-workers or superiors, but the sense of fairness they have toward others is formed by the combination of various factors which form the basis of the HRM system, such as the level of compensation received, the promotion system, and performance evaluation. For organization members, the feeling that they are being treated appropriately is a necessary condition to increase their motivation to work. Consequently, the perceived fairness that organizational members have toward their own treatment is said to occur when they receive appropriate treatment (Adams, 1965; Lerner, 1981). The perceived fairness held by members has been treated as a factor that precedes many psychological and behavioral characteristics of the job.

Ensuring fairness when introducing performance pay will be affected strongly by the quality of the relationship and interaction between the evaluator and the evaluatee. According to Folger et al. (1992), during performance appraisal, in addition to the objective measurement (tests) of the performance of the appointee by the rater, there is also an aspect of disputes between the rater and the appointee about the performance. In performance evaluation, "due process" consists of the following three elements: (1) adequate notice, (2) fair hearing, and (3) judgment based on evidence. In addition, according to Narcisse and Harcourt (2008), in addition to the aspect of measurement, there is also the aspect of interaction and communication during performance evaluation.

Tyler et al. (1995), from a study of government officials, found that officials who experienced the "due process" described by Folger et al. (1992) tended to accept the results and process of their performance appraisal as fair, even though they received a lower performance appraisal than others. Other researchers have argued for the usefulness of performance appraisals being conducted, or the process itself, for increasing the sense of fairness among organization members (e.g., Cawley et al., 1998; Levy and Williams, 2004).

In relation to empirical research on public organizations, Narcisse and Harcourt (2008) pointed out four factors that affect public officials' perceptions of fairness in performance appraisal: (1) consistency in reward distribution, (2) appraisal frequency, (3) job-relevant

criteria, and (4) rater and ratee training. Kavanagh et al. (2007) pointed out that public officials' perceptions of fairness in performance appraisal are influenced by (1) participation in performance appraisal, (2) attitudes toward the supervisor, and (3) knowledge of the performance appraisal process.

To summarize the discussion presented above, in the context of NPM reform, as organizational goals have become more result-oriented, a need has arisen for change in HRM practices. Performance-based HRM can be an effective tool to ensure fairness in the personnel treatment of members. In this case, the external rewards obtained through performance-based HRM might have the effect of intrinsically motivating public officials.

Furthermore, in Japan, where NPM reform is underway, the 2016 revision of the Local Public Service Law led to a shift to performance-based HRM in many local governments, but in some municipalities, they continued to use the earlier seniority-based HRM system. Kawanishi city was one of them. Many members of these organizations wanted to move from seniority-based HRM system to performance-based HRM. In this case, the continued use of traditional HRM system that is not based on performance might make it difficult to ensure a sense of fairness among members and to motivate them intrinsically. Based on the discussion presented above, the following hypothesis can be derived.

Hypothesis 4: In the wake of the 2016 amendments to the Local Public Service Law, the effect of perceived fairness of personnel treatment on intrinsic motivation of officials is greater in organizations where seniority-based HRM systems continue.

Research Method

Estimation 1: Effects of external rewards

For this section, we use questionnaire survey data from Kawanishi city to test hypotheses about the effects of perceived fairness related to personnel treatment on intrinsic motivation of officials to perform their jobs.

The survey data used are those for which the author has obtained permission for secondary use through a request for information disclosure to Kawanishi city. The data were collected from results of a survey of employees conducted in Kawanishi city during 2015–2018. Data

to be used for this study are limited to 2018 because, in the survey after 2019, questions about age and gender were longer included among questions about respondents' attributes because Kawanishi city, the survey administrator, has recognized gender freedom. As already described, after amendment of the Local Public Service Law in 2016, Kawanishi city does not reflect the results of performance evaluation of officials in salary increases, bonuses, promotion, or advancement.

The descriptive statistics of the data are presented in Table 3. The total number of observations was 2,999. Variables 1–5 are based on responses given with four choices: agree, somewhat agree, disagree, and strongly disagree. Dependent variables are "Do you feel that your current job is worthwhile?". The variable is viewed as a proxy variable for the fact that public officials are intrinsically motivated by their jobs. As independent variables, we will use the following three variables to express external rewards related to compensation for work: "Do you think you receive compensation commensurate with your work content and responsibilities?", "Do you think the current promotion system is appropriate?", and "Do you think your abilities, work attitude, and achievements are fairly evaluated?" The age, gender, and occupation of the questionnaire respondents are used respectively as control variables.

Multi-level analysis is applied to conduct empirical analysis, which includes consideration of differences in each workplace.⁶ To calculate the standard error, we use a cluster robust standard error that allows for local correlations among workplaces. Multicollinearity among the variables confirmed that the value of variance inflation factor (VIF) for each regression model was, at most, 1.51, which is lower than the standard value of 10. Signs of the estimated coefficients of each independent variable expected in the empirical analysis are significant and positive when any one of the hypotheses from Hypothesis 1 to Hypothesis 3 is valid.

Table 3 Here

⁶ In the questionnaire survey, data were obtained for each official. However, because the possibility of local correlations occurring in each workplace might arise depending on the questionnaire items, multilevel analysis will be applied to assess the results. For a theoretical explanation of multilevel analysis, please refer to Raudenbush and Bryk (2002).

The estimation results are presented in Table 4. Model 1 represents the case without covariates. Model 2 represents the case with covariates.

Before discussion of the estimation results, the results of the likelihood ratio tests of whether a multilevel analysis should be employed are presented respectively in the lower part of the estimation results in all models. Variance between workplaces (random effects) shows the variance of the constant term as a random effect. As a result of the likelihood ratio test, the null hypothesis of no random effect (intercept variance = 0) was rejected in every model: the multilevel model was adopted. Therefore, sufficient local correlation was found for each workplace in the dependent variable to which multilevel analysis should be applied.

Regarding results of Model 1 and Model 2, although the sign of the estimated coefficient for "Do you think you receive pay with your job description and responsibilities?" is positive, the results are not significant in either case. It cannot be said that an increase in this satisfaction with respect to pay received does not engender a lack of intrinsic motivation for the job. Therefore, Hypothesis 1 is not supported.

The sign of the estimated coefficient for "Do you think the current promotion mechanism is appropriate?" is positive and significant at the 1% level, respectively. The sign of the estimated coefficient for "Do you think the current promotion system is appropriate?". The results showed that when this satisfaction increases with respect to the evaluation of performance, officials are probably intrinsically motivated to perform their jobs. Therefore, Hypothesis 2 is supported.

Furthermore, the sign of the estimated coefficient for "Do you think that your abilities, work attitude, and achievements are fairly evaluated?" is positive and significant at the 1% level, respectively. The results showed, when this satisfaction increases with respect to the evaluation of performance, officials are probably intrinsically motivated to perform their jobs. Therefore, Hypothesis 3 is supported.

A review of the analysis results indicates that hypotheses 2 and 3 are supported, but Hypothesis 1 is not supported. Although Hypothesis 1 is not supported, hypotheses 2 and 3 are supported because the results of Hypothesis 1 are generally in line with arguments from earlier studies that the intrinsic motivation of public officials to perform their jobs is not easily influenced by the pay level itself, but the implication of the results of hypothesis 2 and

hypothesis 3 are that such factors make it difficult for them to be intrinsically motivated to perform their jobs when they are dissatisfied with the traditional seniority-based personnel management. Particularly, the Local Public Service Act was revised in 2016. Performance-based HRM systems are being introduced into municipalities gradually. It can be inferred that dissatisfaction with the traditional HRM system in one's own organization makes it difficult to motivate officials to perform their duties when such an HRM reform is not forthcoming.

Table 4 Here

Estimation 2: Effects of perceived fairness

The empirical analysis presented in the preceding section examined how a sense of fairness related to the personnel treatment of officials associated with individual personnel policies, such as the pay level, the system of promotion, performance evaluation, and work allocation, affects the intrinsic motivation of public officials to perform their jobs. Based on results of this analysis, this section presents examination of the effects on intrinsic motivation of perceived fairness related to personnel treatment that is likely to change as a result of this series of HRM policies before and after revision of the Local Public Service Law in 2016.

As in the analysis in the preceding section, the dependent variable in the empirical analysis is "Do you feel that your current job is worthwhile?". The major difference from the analysis described in the preceding section is that the dependent variable is the composite variable: "Perceived fairness related to personnel treatment". That is related with personnel treatment overall: "Do you think you receive compensation commensurate with your work content and responsibilities?", "Do you think the current promotion system is appropriate?", "Do you think your abilities, work attitude, and achievements are fairly evaluated?", and "Do you think that the distribution of work to you is fair?".⁷

⁷ Results of factor analyses for these four variables are presented in the Appendix. To summarize the analysis results, the values of the eigenvalues confirmed a one-factor structure for the four variables. Cronbach's alpha coefficient also exceeded the standard of 0.7. Based on the discussion presented above, the composite of these four variables was judged to be statistically valid. For more details about the results of the analysis, please refer to the Appendix.

Then, we examine whether an interaction effect exists between the synthetic variable and each year dummy variable with 2015 year as the reference standard. The age, gender, and occupation of the questionnaire respondents are used, respectively, as control variables.

Multi-level analysis is applied to conduct empirical analysis that takes into account differences in each workplace.⁸ In calculating standard errors, cluster robust standard errors, which allow for local correlations among municipalities, are used. Regarding the multicollinearity among the variables, it was confirmed that the maximum value of VIF for each regression model was 1.56, which was lower than the standard value of 10. The sign of the estimated coefficient expected in the empirical analysis is significant and positive in the interaction term between "Perceived fairness in personnel treatment" and each year dummy variable when Hypothesis 4 holds.

The estimation results are presented in Table 5. Model 3 and Model 5 examine the case without covariates, whereas Models 4 and Model 6 examine the model with covariates. Model 5 and Model 6 differ from Models 3 and Model 4 in that they include an interaction term between "sense of fairness in personnel treatment" and each year dummy.

Before discussion of the estimation results, the results of the likelihood ratio test to determine whether multilevel analysis should be employed are shown in the bottom part of the estimation results for all models. The "Variance across Workplaces (Random Effects)" section shows the variance of the constant term as a random effect. As a result of the likelihood ratio tests, the null hypothesis that there is no random effect (intercept variance = 0) in any of the models is rejected: the multilevel model is adopted. Therefore, there is sufficient local correlation for each workplace in the dependent variable that multilevel analysis should be applied.

Regarding the results of Model 3 and Model 4, the sign of the estimated coefficient for "Perceived fairness related to personnel treatment" is positive and significant at the 1% level. In addition, the sign of the estimated coefficient for each dummy variable from 2016 to 2018 is negative and significant at the 1% level. From interpretation of these results, one can point

⁸ As in the analysis in the preceding section, this questionnaire survey obtained data in units of officials. However, because the possibility of local correlations occurring in different workplaces might arise depending on the question items, multilevel analysis will be applied to examine the results.

out that the sense of fairness in terms of personnel treatment has a general effect on intrinsic motivation toward the job, and that if 2015, before the amendment of the Local Public Service Law, is taken as a reference year, intrinsic motivation toward the job has become less likely in all subsequent years.

Furthermore, in Model 5 and Model 6, the sign of the estimated coefficient of the interaction term between "sense of fairness related to personnel treatment" and each dummy variable from 2016 to 2018 is positive and significant at the 1% level. From these results, probably the effect of "perceived fairness in personnel treatment" on intrinsic motivation to work has been increasing year by year with respect to 2015, before revision of the Local Public Service Law. Therefore, Hypothesis 4 is supported.

Table 5 Here

It is noteworthy that Figure 1, panels A through C, presents results of the interaction effect subtests for the effect of perceived fairness of personnel treatment on intrinsic motivation for the job, using 2015 as the base year. As might be apparent from these figures, compared to 2015, when performance-based HRM was not introduced into many municipalities, we can confirm visually that the effect of perceived fairness in personnel treatment on intrinsic motivation for work is more significant in organizations that continue to use traditional HRM practices in subsequent years.

Figure 1 Here

Findings

Empirical analyses conducted for this study revealed that the intrinsic motivation of public officials to perform their jobs is not necessarily unaffected by external rewards or system, but that it is particularly affected by motivations other than pay level, i.e., the system of promotion and the way performance is evaluated. Additionally, results show that the effects of perceived fairness in terms of pay levels, promotion mechanisms, performance appraisals, and work distribution on the intrinsic motivation of public officials to perform their jobs is

greater in organizations that continue to use the traditional seniority-based HRM system rather than performance-based HRM.

As for Japanese public officials, the HRM has been based on a seniority-based system with no differentiation. However, with revision of the Local Public Service Act in 2016 year and with improvement of HRM practices in other local governments, one can infer that this is the result of capturing the negative reactions of the officials in public organizations that have not improved such new HRM practices and which have continued as before with the old HRM practices.

Discussion and Implications

To date, controversy has persisted in the field of public administration regarding the intrinsic motivation of public officials, with many earlier studies particularly addressing whether or not they are influenced by external rewards, in terms of their pay level. Many earlier studies have pointed out that public officials are not influenced by the pay level in performing their duties. If such a point is valid, then it is possible that there will not be much difference in job performance of public officials whether the HRM system is seniority-based or performance-based.

However, as NPM reforms progressed and organizational goals became more customer-oriented and result-oriented, the issue of how to motivate and inspire public officials to meet these goals became an important issue in HRM systems in both the public and private sectors. As a result, public organizations have been making various efforts to refine their HRM practices and to improve the motivation and performance of officials.

Before the 2016 amendment to the Local Public Service Law, Japanese local governments had always used a seniority-based HRM system that did not differentiate in terms of personnel treatment, but the amendment did not necessarily result in a uniform change in traditional HRM system. As far as results of the analysis in this paper are concerned, if there are difficulties inherent in such non-performance-based HRM system, a need exists to improve them. In fact, because many officials in Kawanishi city desire performance-based HRM system, it was observed that if the traditional HRM system is left in place, the sense of fairness in personnel treatment will not be enhanced, which in turn will adversely affect the

intrinsic motivation of public officials to perform their duties. Empirical analysis results indicate that, for public officials who have long been subjected to seniority-based and egalitarian personnel treatment, the new performance-based HRM system might be regarded as a way to ensure greater fairness in how they are rewarded for their performance. Validation of such a claim requires an assumption that the intrinsic motivation of public officials will be strengthened to some degree by external rewards. Results of the empirical analysis presented herein suggest that the motivation for public officials to perform their duties is premised on the existence of a fair employment relationship with the organization to which they belong, centering on the HRM system.

As earlier studies in the field of public administration have pointed out, even if public officials are easily motivated by job satisfaction, if one emphasizes the point that they are also laborers, then their extrinsic needs must also be satisfied to some degree, for example, by being fairly evaluated for their performance and receiving reasonable compensation. The external environment which surrounds public organizations must be satisfied to some degree. Particularly as the external environment surrounding public organizations changes and organizational goals become more performance-oriented, performance-based HRM systems can be powerful tools for enhancing a sense of fairness in personnel treatment of officials if it is introduced in a way that is linked to such performance orientation. As described above, the study findings were obtained with support from findings in the field of business administration in recent years. The results include many points that have not been clarified in existing studies conducted in the field of public administration. They therefore have some policy implications.

Finally, as a remaining issue, the empirical analysis presented herein specifically examined effects of the changes in the HRM system in Japan on the perceptions of fairness held by organization members under the same traditional HRM system. A difficulty exists that the conclusions reached are not generalizable quantitatively. This difficulty is an important limitation of the empirical analyses presented in this paper. We regard it as an important issue that must be overcome in future studies. Based on the study findings, we would like to work on further clarification in the future.

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Table1 Introduction of performance evaluation system in each municipality

	2016 year	2017 year	2018 year	2019 year	2020 year	Total number of municipalities
Use for pay increase	319 (18.5%)	410 (23.8%)	718 (41.7%)	830 (48.2%)	959 (55.7%)	1,722
Use for bonus	391 (22.7%)	496 (28.8%)	798 (46.3%)	885 (51.4%)	1,037 (60.2%)	1,722
Use for promotion and advancement	246 (14.3%)	306 (17.8%)	628 (36.5%)	869 (50.5%)	1,120 (65.0%)	1,722
Use for demotion	59 (3.4%)	70 (4.1%)	540 (31.4%)	819 (47.6%)	1,066 (61.9%)	1,722

Note1) The figures in the table are the number of municipalities when the system is utilized for all officials.

Note2) The source of the data is the following documents.

Source.

Ministry of Internal Affairs and Communications (MIC) website, "Human Resource Development and Personnel Evaluation of Local Governments"

<URL : https://www.soumu.go.jp/main_sosiki/jichi_gyousei/c-gyousei/jinzai.html> (referred to March 19, 2021)

Table2 Results of Survey on Job Satisfaction in Kawanishi City (2015-2018)

Question A: "Do you think that you receive pay appropriate to the nature of your work and responsibilities?"

	20's	30's	40's	50's	Total
Agree	163 (18.7%)	169 (22.5%)	136 (16.9%)	156 (18.6%)	624 (19.1%)
Somewhat agreee	372 (42.6%)	354 (47.1%)	412 (51.1%)	393 (46.8%)	1,531 (46.8%)
Not really agree	251 (28.8%)	186 (24.7%)	205 (25.4%)	225 (26.8%)	867 (26.5%)
Disagree	87 (10.0%)	43 (5.7%)	53 (6.6%)	66 (7.9%)	249 (7.6%)
Total	873 (100.0%)	752 (100.0%)	806 (100.0%)	840 (100.0%)	3,271 (100.0%)

Question B: "Do you think the current promotion system is appropriate?"

	20's	30's	40's	50's	Total
Agree	139 (16.0%)	85 (11.3%)	70 (8.7%)	67 (8.1%)	361 (11.1%)
Somewhat agreee	439 (50.6%)	307 (41.0%)	330 (41.1%)	361 (43.7%)	1,437 (44.3%)
Not really agree	215 (24.8%)	257 (34.3%)	295 (36.7%)	282 (34.1%)	1,049 (32.3%)
Disagree	75 (8.6%)	100 (13.4%)	108 (13.4%)	117 (14.1%)	400 (12.3%)
Total	868 (100.0%)	749 (100.0%)	803 (100.0%)	827 (100.0%)	3,247 (100.0%)

Question C: "Do you think that your abilities, work attitude, and achievements are evaluated fairly?"

	20's	30's	40's	50's	Total
Agree	229 (27.1%)	181 (24.6%)	130 (16.9%)	137 (16.5%)	677 (21.3%)
Somewhat agreee	508 (60.0%)	420 (57.1%)	447 (58.0%)	454 (54.8%)	1,829 (57.5%)
Not really agree	104 (12.3%)	117 (15.9%)	160 (20.8%)	186 (22.5%)	567 (17.8%)
Disagree	5 (0.6%)	18 (2.4%)	34 (4.4%)	51 (6.2%)	108 (3.4%)
Total	846 (100.0%)	736 (100.0%)	771 (100.0%)	828 (100.0%)	3,181 (100.0%)

Question D: "What do you think should be emphasized in the promotion system?"

	20's	30's	40's	50's	Total
The system should be based on evaluation of ability and performance	531 (61.9%)	442 (60.4%)	465 (59.0%)	544 (67.1%)	1,982 (62.2%)
Should be based mostly on seniority	165 (19.2%)	117 (16.0%)	84 (10.7%)	83 (10.2%)	449 (14.1%)
A promotion examination system should be used.	87 (10.1%)	100 (13.7%)	135 (17.1%)	99 (12.2%)	421 (13.2%)
The intention of the head of the organization should be emphasized.	63 (7.3%)	43 (5.9%)	57 (7.2%)	49 (6.0%)	212 (6.6%)
Other	12 (1.4%)	30 (4.1%)	47 (6.0%)	36 (4.4%)	125 (3.9%)
Total	858 (100.0%)	732 (100.0%)	788 (100.0%)	811 (100.0%)	3,189 (100.0%)

Note) The source of the data is the following documents.

Source. "Survey on job satisfaction in Kawanishi City" (2015-2018).

Table3 Descriptive statistics of the data

	Variable	Number of observations	Mean	Standard deviation	Minimum	Maximum
1	"Do you feel that your current job is worthwhile?"	2,999	3.156	0.756	1.000	4.000
2	"Do you feel that your pay is appropriate for your work and responsibilities?"	2,999	2.789	0.838	1.000	4.000
3	"Do you think that the current promotion system is appropriate?"	2,999	2.556	0.846	1.000	4.000
4	"Do you think that your abilities, work attitude, and performance are being evaluated fairly?"	2,999	2.974	0.718	1.000	4.000
5	"Do you think that the distribution of work to you is fair?"	2,999	2.829	0.836	1.000	4.000
6	Age (years)	2,999	39.202	11.375	24.500	54.500
7	Gender (Male=1, Female=0)	2,999	0.637	0.481	0.000	1.000
8	Occupation (Administrative = 1, Others = 0)	2,999	0.631	0.483	0.000	1.000

Note) The source of the data is the following documents.

Source. "Survey on job satisfaction in Kawanishi City" (2015, 2016, 2017, 2018).

Table 4 Estimation 1: Results for the impact of external rewards

	Model 1 (No Covariates)			Model 2 (With Covariates)		
	Coeff.	S. E.	P> t	Coeff.	S. E.	P> t
"Do you feel that your pay is appropriate for your work and responsibilities?"	0.027	0.020	0.181	0.033	0.023	0.150
"Do you think that the current promotion system is appropriate?"	0.140	0.032	0.000 ***	0.139	0.032	0.000 ***
"Do you think that your abilities, work attitude, and performance are being evaluated fairly?"	0.380	0.011	0.000 ***	0.390	0.012	0.000 ***
"Do you think that the distribution of work to you is fair?"	0.254	0.023	0.000 ***	0.248	0.026	0.000 ***
2016 year dummy	-0.019	0.001	0.000 ***	-0.022	0.001	0.000 ***
2017 year dummy	-0.046	0.001	0.000 ***	-0.047	0.001	0.000 ***
2018 year dummy	-0.039	0.003	0.000 ***	-0.037	0.003	0.000 ***
Age				0.058	0.017	0.001 ***
Gender				0.050	0.014	0.000 ***
Occupation				-0.152	0.051	0.003 ***
Variance across workplaces (Random effect)	0.051	0.005		0.028	0.003	
Log likelihood	-2,815.808			-2802.023		
Wald chi2	722.210			748.720		
Prob > chi2	0.000			0.000		
LR test vs. oprobit regression:	chibar2(01) = 61.20 Prob>=chibar2 = 0.000			chibar2(01) = 36.26 Prob>=chibar2 = 0.000		
Number of observations	2,999			2,999		

Note 1) In the table, * denotes significance ($p < 0.1$), ** denotes significance ($p < 0.05$), and *** denotes

Note 2) Robust standard errors clustered by year are used in the estimation.

Table5 Estimation 2: Results for the effect of perceived fairness

	Model 3 (No Covariates)			Model 4 (With Covariates)		
	Coeff.	S. E.	P> t	Coeff.	S. E.	P> t
"Perceived fairness regarding personnel treatment"	0.964	0.067	0.000 ***	0.969	0.073	0.000 ***
2016 year dummy	-0.062	0.002	0.000 ***	-0.067	0.002	0.000 ***
2017 year dummy	-0.118	0.001	0.000 ***	-0.125	0.003	0.000 ***
2018 year dummy	-0.089	0.006	0.000 ***	-0.081	0.006	0.000 ***
Age				0.002	0.001	0.072 *
Gender				0.135	0.031	0.000 ***
Occupation				-0.357	0.108	0.001 ***
Variance across workplaces (Random effect)	0.057	0.012		0.038	0.005	
Log likelihood	-2,871.785			-2857.622		
Wald chi2	623.680			651.490		
Prob > chi2	0.000			0.000		
LR test vs. oprobit regression:	chibar2(01) = 82.32 Prob>=chibar2 = 0.000			chibar2(01) = 44.63 Prob>=chibar2 = 0.000		
Number of obs	2,999			2,999		
	Model 5 (No Covariates)			Model 6 (With Covariates)		
	Coeff.	S. E.	P> t	Coeff.	S. E.	P> t
Perceived fairness regarding personnel treatment	0.947	0.008	0.000 ***	0.952	0.011	0.000 ***
2016 year dummy	-0.056	0.001	0.000 ***	-0.060	0.002	0.000 ***
2017 year dummy	-0.112	0.001	0.000 ***	-0.118	0.003	0.000 ***
2018 year dummy	-0.085	0.006	0.000 ***	-0.079	0.003	0.000 ***
Perceived fairness on personnel treatment × 2016 year dummy	0.242	0.002	0.000 ***	0.256	0.006	0.000 ***
Perceived fairness on personnel treatment × 2017 year dummy	0.237	0.003	0.000 ***	0.247	0.006	0.000 ***
Perceived fairness on personnel treatment × 2018 year dummy	0.166	0.003	0.000 ***	0.162	0.002	0.000 ***
Age				0.002	0.001	0.077 *
Gender				0.135	0.032	0.000 ***
Occupation				-0.363	0.108	0.001 ***
Variance across workplaces (random effect)	0.061	0.016		0.038	0.005	
Log likelihood	-2,867.968			-2853.405		
Wald chi2	629.190			657.360		
Prob > chi2	0.000			0.000		
LR test vs. oprobit regression:	chibar2(01) = 82.84 Prob>=chibar2 = 0.000			chibar2(01) = 45.63 Prob>=chibar2 = 0.000		
Number of observations	2,999			2,999		

Note 1) In the table, * denotes significance (p < 0.1), ** denotes significance (p < 0.05), and *** denotes

Note 2) Robust standard errors clustered by year are used in the estimation.

Figure1-A Interaction Analysis: Compared 2015 year to 2016 year

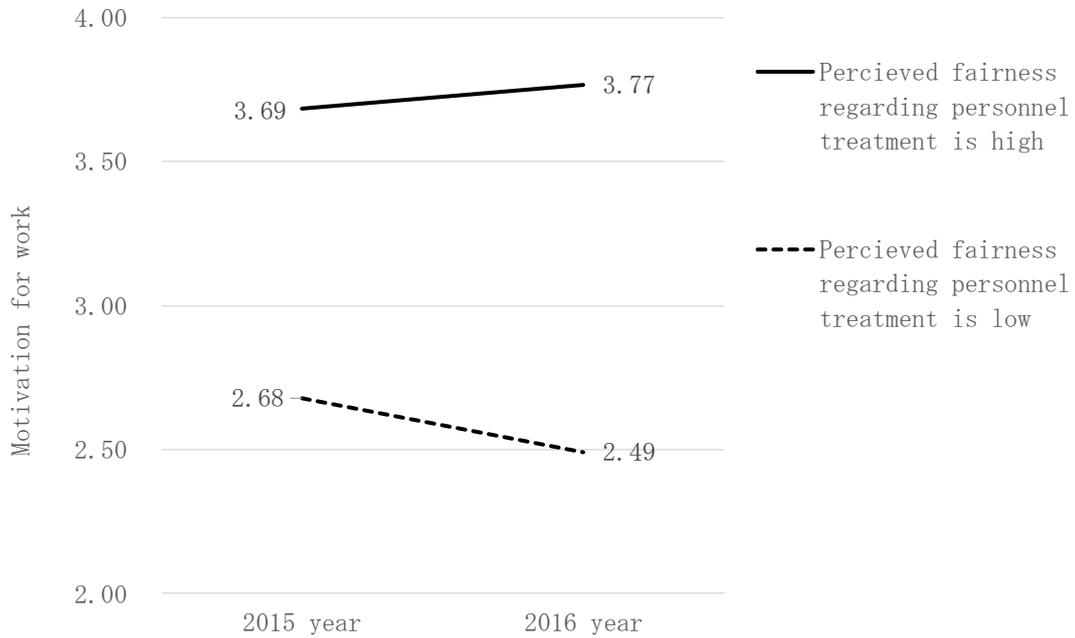


Figure1-B Interaction Analysis: Compared 2015 year to 2017 year

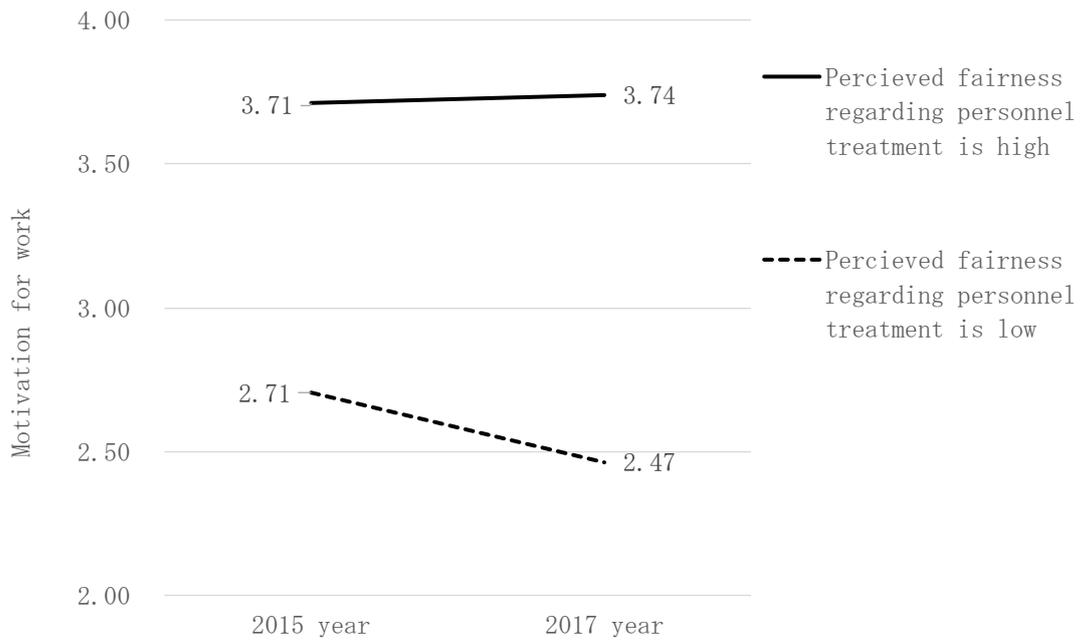
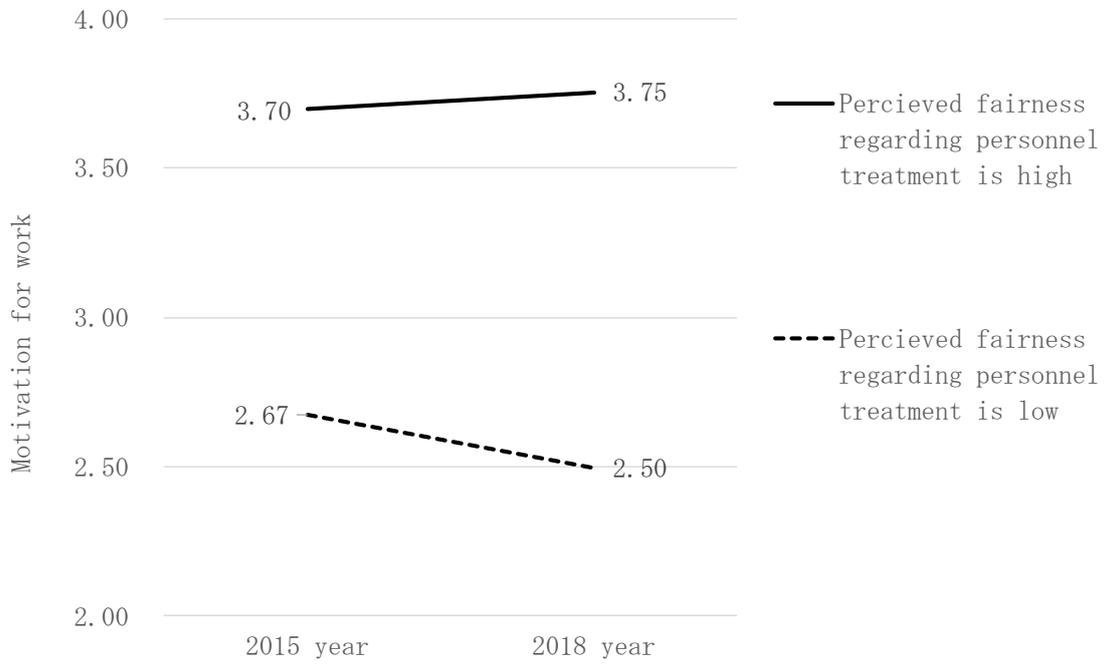


Figure1-C Interaction Analysis: Compared 2015 year to 2018 year



Appendix

In the analysis of the effect of perceived fairness of personnel treatment in the text, perceived fairness of personnel treatment is used as the dependent variable, which is based on four questions related to external rewards: "Do you think that your work ability, attitude, and performance are fairly evaluated?", "Do you feel that you are being paid commensurate with your work content and responsibilities?", "Do you think the current promotion system is appropriate?", "Do you think that the current promotion system is appropriate?", and "Do you think that the distribution of work to you is fair?". The variables are a composite of the following. To create the composite variables, the responses to these four questions were derived for each observation. The first step was to conduct an exploratory factor analysis.

The results are shown in Table 6. Because a single latent variable (factor) explained 64.4% of the total variance, a one-factor structure was read ($\alpha=0.723$). Given that the variables used were qualitative variables, we conducted an exploratory factor analysis (maximum likelihood method, Promax rotation) based on the polychoric correlation matrix. The eigenvalues of each factor were 1.475, -0.019, -0.145, and -0.203, indicating the validity of the one-factor structure (Kaiser–Guttman rule). For this reason, we decided to create a composite variable comprising the four variables as shown in this appendix. The variable was created by simple averaging. In this way, the four observed variables are taken to represent perceived fairness related to personnel treatment. The composite variable is fed into the analytical model in the text.

Table 6 Here

Table6 Estimation results of factor analysis

Factor analysis/correlation Number of obs = 2,999
 Method:principal factors Retained factors = 1
 Rotation:(unrotated) Number of params = 4

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	1.475	1.494	1.331	1.331
Factor2	-0.019	0.126	-0.017	1.314
Factor3	-0.145	0.059	-0.131	1.184
Factor4	-0.203	.	-0.184	1.000

LR test: independent vs. saturated: chi2 independent chi2(6) = 2,300.12
Prob>chi2 = 0.000

Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Uniqueness
"Do you feel that your pay is appropriate for your work and responsibilities?"	0.644	0.586
"Do you think that the current promotion system is appropriate?"	0.610	0.627
"Do you think that your abilities, work attitude, and performance are being evaluated fairly?"	0.593	0.649
"Do you think that the distribution of work to you is fair?"	0.580	0.663

Test scale = mean(unstandardized items)

Average interitem covariance: 0.260
 Number of items in the scale: 4
 Scale reliability coefficient: 0.723