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NEW PUBLIC MANAGEMENT AND MUNICIPAL PERFORMANCE: DO NPM REFORMS BOOST PERFOR- MANCE?

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New public management and municipal performance: Do NPM reforms boost performance?¹
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ABSTRACT

New Public Management (NPM) reforms have been adopted worldwide since the mid-1970s to improve government effectiveness and efficiency. The basic premise of NPM reforms is that market orientation and management focus in the public sector will enhance effectiveness and efficiency of service delivery (Christensen and Læg Reid 2010). Although NPM reforms have existed for a quarter century, we still have limited understanding of whether NPM reforms fulfill their expectations. Most importantly, very few empirical studies have been conducted that actually assess the impact of NPM reforms on performance (Alonso, Clifton, and Díaz-Fuentes 2015, Dahlström, Nistotskaya, and Tyrberg 2016, Hammerschmid and Van de Walle 2011). This study helps fill this gap by examining the effect of different NPM-type reforms on municipal performance. In particular, we assess the impact of NPM reforms on three dimensions of municipal performance – gender equity, efficiency and effectiveness – by using a data set of 810 city-level Japanese municipalities. Findings show that municipalities’ overall effort to create NPM reforms is not associated with gender equity and effectiveness in revenue expansion. However, findings suggest that municipalities with a higher commitment to various NPM-type reforms are likely to operate with lower administrative overhead costs. Results also suggest that municipalities’ efforts supporting individual reform, including outsourcing and municipal assets and debt management reform, are associated with higher efficiency in overhead costs and increased revenues from selling municipal assets. This study tests the impacts of NPM-type reforms on municipal performance in an understudied Asian developed setting.

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Key Words: NPM (New Public Management), Administrative Reform, Municipal Performance, Japan

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Introduction

Worldwide, scholars and practitioners have searched for the factors and practices that improve governmental performance. This search has intensified since the early 1980s with the advent of New Public Management (Osborne and Gaebler 1992), which has generated greater concern for government performance and led to adopting market practices (Hood 1991, Walker et al. 2011). As a result, private sector practices and strategies have been promoted and implemented in public organizations with the goal of boosting performance (Christensen and Lægreid 2011, Diefenbach 2009, Hyndman and Lapsley 2016). One of the basic assumptions is that strong external pressure exists and public organizations need a new strategy to change and sustain themselves through marketization and use of private sector approaches (Diefenbach 2009). Core components of NPM typically include hands-on professional management, explicit standards and performance measurements, emphasis on outputs controls, disaggregation and decentralization, competition in public service provisions, stress on private sector management practices, and discipline and parsimony in resource use (Hood 1991).

Although NPM reforms have been used for a quarter century, we still have limited understanding of whether those reforms fulfill their expectations. Most importantly, very few empirical studies have been conducted that actually assess the impacts of NPM reforms on performance (Alonso, Clifton, and Díaz-Fuentes 2015, Dahlström, Nistotskaya, and Tyrberg 2016, Hammerschmid and Van de Walle 2011). Hammerschmid and Van de Walle (2011) lament such paucity of empirical studies of NPM reforms and describe the area as an “empirical desert” (p.11). To fill this research gap, some studies conduct literature reviews of previous studies on NPM. For instance, by reviewing 519 studies on the impact of NPM reforms across Europe, Pollitt and Dan (2013) found that few studies examine the impact of NPM reforms on outputs as well as outcomes. Only 26.6 percent of previous studies examined include entries for changes in outputs or outcomes. Furthermore, many studies found negative effects of NPM-type reforms on outcomes and outputs. They also found many previous studies do not discover any changes. A review of the NPM literature in central and eastern Europe by Dan and Pollitt (2015) finds that some of NPM tools, including performance management, quality improvement, and agency creation, have positively affected organizational performance or public service delivery. This literature suggests we still have a limited understanding of how NPM-type reforms affect organizational performance and social outcomes. Furthermore, although NPM-type reforms are global phenomenon, spread across both developed and developing countries (Diefenbach 2009), relatively fewer studies have assessed the impacts of

NPM reforms on performance in Asian developed settings, especially Japan, compared to a large volume of studies examining Oceanian, North American and European countries.

The goal of this paper is to examine the impacts of NPM reforms on the following three dimensions of municipal performance – gender equity, efficiency in municipal spending, and effectiveness in revenue expansion – by using a data set of Japanese municipalities. Although many studies examine efficiency and effectiveness in public service provisions as main targets of NPM reforms, the link between NPM efforts and gender has been largely overlooked in previous empirical studies. A few existing studies suggest the rise of NPM weakens the power of women in local politics and strengthens men’s power in leading management positions (Hedlund 2013) and makes “entrepreneurial masculinity” culture dominant in public organizations (Davies and Thomas 2002). Our first goal is to test how municipalities’ NPM efforts influence gender equality in managerial positions in the administrative body. Our second goal is to assess how NPM reform efforts are associated with efficiency in municipal spending operationalized by administrative overhead costs and personnel costs. Finally, our third goal is to test the impacts of NPM reforms efforts on effectiveness in revenue expansion and financial management.

This study uses a case of Japanese municipalities. Japan is a suitable case for analysis for several reasons. First, many local governments in Japan started to adopt NPM approaches in the late 1990s (Kudo 2015). However, as is true in studies in other developed countries, we still have limited empirical understanding about the effects of NPM on municipal performance. Most existing studies tend to make ideological or descriptive arguments. Secondly, Japan exhibits lower levels of female political representation compared with other developed and developing countries (Bochel and Bochel 2005, Eto 2010, Khatwani , Mikanagi 2001). Japan still lags behind other advanced countries when it comes to gender equality in general. For instance, Japan ranks very low among developed nations in indicators, such as maternal employment rates, gender gap in full-time earnings and ratio of women in managerial positions. Japan’s gender gap is large and persistent (Estévez-Abe 2013).

Therefore, this study tests how NPM-type reforms affect gender equality in local governments within in a context of relatively lower level of female representation, both in politics and society within advanced democracies (Ogai 2001, Eto 2010, Bochel and Bochel 2005, Bochel et al. 2003, World Economic Forum n.d., UNDP 2016). Thirdly, Japanese local governments have similar administrative structures regardless of their geographic location and municipal size, thus allowing us to control for institutional factors. Fourthly, Japanese regions are less diverse with respect to culture, ethnicity and economy, compared to other developed countries. For instance, regional

disparities in unemployment rates were the lowest, and regional differences in GDP per capita were the fifth lowest among OECD countries (OECD 2014). Therefore, such homogeneity helps us to control for other factors that may potentially influence dependent variables. Finally, despite the fact that Japan is an advanced democratic country, Japanese local governments have been studied less in the English literature of public administration, compared to those in Western European and North American countries. Examining this understudied setting helps us to build better theories of the municipal size-performance relationship and municipal merger, which responds to the recent increasing interest in contextual factors in public management (Meier, Rutherford, and Avellaneda 2017) and comparative and international perspectives in public administration (Jreisat 2002, Fitzpatrick et al. 2011, Raadschelders and Lee 2011, Jreisat 2005, Hou et al. 2011).

This study is organized into five sections. The first section reviews what has been studied about the impacts of NPM on municipal performance, and provides the rationale for testing the NPM effects on selected three dimensions of municipal performance. The second section provides background information on Japanese local governments and NPM reforms in Japan. The third section describes the research design and variable operationalization, followed by a fourth section containing results and analysis. The fifth section presents conclusions, limitations of this research and future study agendas.

THEORETICAL ARGUMENT: NPM REFORMS AND MUNICIPAL PERFORMANCE

NPM was introduced to public organizations in the late 1970s, with the hope of improving performance of public sector organizations by adopting business-like styles of management (Diefenbach 2009). Most NPM efforts have common goals: 1) improving the effectiveness and efficiency of the public sector, 2) enhancing responsiveness of public organizations to their customers, 3) reducing public expenditure, and 4) improving accountability of public sector managers (Christensen and Læg Reid 2011). NPM generally aims at these goals through three approaches: disaggregation, competition and incentivization (Dunleavy et al. 2006). Disaggregation includes agentification, development of quasi-government agencies and improved performance measurement. Competition includes outsourcing, intragovernment contracting, deregulation and enhancing user control. Incentivization includes privatizing asset ownership, performance-related pay, public-private partnership and valuing public sector equity (Dunleavy et al. 2006).

Although significant attention has been given to efficiencies and effectiveness in organizational performance in previous studies about NPM, relatively less scholarly attention has been paid to empirical links between NPM and gender representation in public organizations. Several previous studies show concern for negative effects of NPM-type reforms on gender equality in public organizations. The rise of NPM weakens the power of women in local politics and strengthens men's power in leading management positions (Hedlund 2013), as well as giving privileges to masculinity and enhancing masculine culture within public organizations (Davies and Thomas 2002, Hedegaard and Ahl 2013). Furthermore, previous studies of private companies suggest a gender difference exists in attitudes toward risk perception. In the private sector, literature on gender and financial behavior has reported a strong link exists between gender and individual preference and behavior regarding financial decision making (Barber and Odean 2001, Bernasek and Shwiff 2001, Charness and Gneezy 2012, Croson and Gneezy 2009, Eckel and Grossman 2002, 2008, Filippin and Crosetto 2016, Jianakoplos and Bernasek 1998, Schubert et al. 1999). Specifically, these studies find that women, when compared with men, exhibit more risk aversion about financial risk taking.ⁱ Given that the nature of NPM introduces business approaches to public sector organizations and encourages public officials to be more risk-takers and entrepreneurial, one may expect commitment to NPM-type reforms may discourage gender equity in public organizations. Therefore, our first proposition is:

H1: NPM reform efforts are negatively associated with gender equity in public organizations.

Increasing efficiency in public sector organizations is one of NPM's core values (Diefenbach 2009, Hood 1991). Efficiency is highly promoted in private sector management. In the public sector, efficiency can be achieved through various NPM-type tools, such as performance measurement, pay-for-performance, establishment of management culture, customer-orientation, outsourcing and privatization. Accordingly,

H2: Municipalities having stronger commitment to NPM reforms are more likely to exhibit higher public spending efficiency, all other factors being equal.

Finally, NPM reforms attempt to develop business-like attitudes (Diefenbach 2009) and promote entrepreneurial and innovative behavior of public sector employees. In addition, NPM's emphasis on managerialism and decentralization in decision-making has the potential to boost ef-

fectiveness in achieving organizational goals. Incentivization and deregulation also help public organizations to achieve results. Therefore,

H3: Municipalities having stronger commitment to NPM reforms are more likely to achieve higher effectiveness in revenue expansion and financial management, all other factors being equal.

CASE SELECTION: JAPANESE LOCAL GOVERNMENTS

Japan adopted a unitary political and administrative system with a two-tier local government system: prefecture as regional government units and municipality as local government units. Municipalities, in turn, are categorized as cities, towns and villages. As of April 2014, Japan has 47 prefectures and 1,718 municipalities, and of these, 790 are cities, 745 are towns and 183 are villages (MIC 2014). Although some municipalities have additional responsibilities depending on population size, basically all municipalities have the same powers and similar responsibilities, such as providing social relief, nursing insurance, national health insurance, etc. (MIC n.d.-a).ⁱⁱ

Japanese local government structure consists of the legislative branch and executive branch. The relationship between legislative and executive bodies is classified as a “strong mayor” system in the United States. The chief executive holds the exclusive power over all executive agencies (CLAIR 2013, Kawasaki 2000). Japanese local governments have adopted a presidential system, in which both the mayor and the local assembly members are directly elected by voters. The mayor and the local assembly are separate and independent entities. Unlike the diversity of local government structures in the U.S., this Japanese structure has been adopted uniformly across municipalities (CLAIR, 2013). Mayors’ rights include enacting regulations, preparing budgets, proposing bills and appointing or dismissing staff. Local assemblies have voting rights in matters regarding budget and ordinances, and they can conduct a no-confidence vote with respect to mayors.

Female representation in local government is considerably low. Female mayors are very few. In 2016, only 21 females were mayors in the 1,721 city, town or village-level municipalities, so they led only 1.2 percent of all municipalities. Likewise in 2016, the average share of female local councilors in municipal assemblies was 12.6 percent for all municipalities. However, across municipalities, considerable variation exists in female representation in local councils (Cabinet Office of Japan 2016). Nevertheless, women’s representation in local administration is relatively higher than female representation at the national administrative level. In 2015, the average percentage of female local officials who held more than middle-level managerial positions was 12.6 percent in all city,

town and village-level municipalities, compared with 3.3 percent at the national level (Cabinet Office of Japan 2015a, 2015b).

Many local governments in Japan started to adopt NPM in the mid/late 1990s (Kudo 2015). NPM tools primarily introduced include performance measurement, program evaluation, customer satisfaction surveys, outsourcing to the private sector, PFI (private finance initiatives), and public-private partnership (Kudo 2015). Although NPM was introduced to Japanese municipalities more than 20 years ago, recent survey results for Japanese municipalities show that municipalities still give very strong attention to NPM (Kudo 2015).

DATA COLLECTION AND VARIABLE OPERATIONALIZATION

The unit of analysis is the municipality-year. Our analysis includes 810 city-level municipalities from 2013 to 2014. Towns and villages were excluded because of the unavailability of certain variables. Administrative reform data, which make up the main independent variables in this study, are obtained from MIC's (Ministry of Internal Affairs and Communications) annual survey of administrative reform in municipal governments (MIC n.d.-b). MIC conducts annual surveys to collect information about administrative reforms that municipalities are currently implementing. The surveys are distributed to all municipalities and collected by MIC. Results are disclosed in the MIC's website. The survey asks whether or not municipalities currently have any plan or strategy for administrative reform, the reform menus on which local governments focus, reform contents and the existence of specific numerical goals of reform. Gender representation data in local governments is obtained from the Gender Equality Bureau in the Cabinet Office of Japan (2015, 2013). Other dependent variables are collected from *Regional Statistics* (MIC 2015) and *Settlement of Municipality Finances* (MIC 2014-2015). Mayoral political and local council data are obtained from *List of Local Chief Executives* (Chiho Jichi Sogo Kenkyujo 2013-2014). Other control variables are from MIC (2015) and MIC (2014-2015).

DEPENDENT VARIABLES

This study assesses the impacts of NPM reforms on different dimensions of municipal performance. We focus on the following dimensions of municipal performance: equity, efficiency and effectiveness of municipal performance. As a dimension of equity, this study specifically tests the

NPM effects on gender representation in managerial positions in local governments. Although many NPM-related existing studies do not place gender as a central research topic, existing studies suggest the rise of NPM weakens the power of women in local politics and strengthens the men's power in leading management positions (Hedlund 2013) and makes "entrepreneurial masculinity" culture dominant in public organizations (Davies and Thomas 2002). We hypothesize that NPM efforts are negatively associated with gender equality in managerial positions in local governments. We operationalize gender equality in the local administrative body as a percentage of female officials in managerial positions. Despite considerable improvement in the last decade, Japanese female representation in politics has been significantly low, compared with other developed and developing countries. According to a survey conducted by the Inter-Parliamentary Union, Japan's share of women in the lower house of parliaments reached only 9.5 percent in 2016, ranking Japan 155 out of 193 surveyed countries (Inter-Parliamentary Union 2016). Female representation in local government is considerably low. Female mayors are very few. In 2016, there were only 21 female mayors in all 1,721 city, town, and village-level municipalities, so they made up only 1.2 percent of all municipalities' leaders. Likewise in 2016, the average share of local councilors in municipal assemblies was 12.6 percent for all municipalities. Nevertheless, women's representation in local administrations is relatively higher than female representation at the national administrative level. In 2015, the average percentage of female local officials who held higher than middle-level managerial positions was 12.6 percent in all city, town and village-level municipalities, compared with 3.3 percent at the national level (Cabinet Office of Japan 2015a, 2015b).

We use the following three measurements as indicators for efficiency in municipal spending: 1) local government's administrative costs per capita, 2) number of local officials per 1,000 residents, and 3) personnel costs per capita. While the first measurement aims at capturing efficiency in overhead costs of municipalities, the other two measurements examine efficiency in terms of human resources. These measurements often are used as indicators for efficiency of municipal organizational performance in public administration literature. Administrative costs cover general administrative overhead expenses, such as employee salary for general affairs department, building and maintenance costs of local government facilities, retirement pay for local officials and other common costs for administrative activities. Personnel costs include salary and retirement payment for mayors, executives and general full-time employees, salary payment for part-time employees, local council salary, payment for administrative commission members and other personnel-related payment.

Finally, effectiveness in revenue expansion and financial management is operationalized with two distinctive indicators: 1) revenues from municipal assets sale per capita, and 2) accumulated municipal debts per capita. Due to increasing debt and declining population and economic conditions, many local governments have faced unprecedented financial pressure. Restoring deteriorating public finances through spending cuts and revenue expansion has been one of the primary goals for most municipalities in Japan. Since declining and aging populations make it difficult for local officials to safely rely on revenue expansion through tax increases, local governments need to consider other tools for revenue expansion. Major tools for revenue expansion include: (1) enhancing tax revenue collection, (2) sales, (3) leases and management of municipal properties, and (4) increasing fees and charges (Research Institute for Local Government 2011).

An amendment to the Local Autonomy Act in 2006 granted power to localities to obtain revenues by utilizing their own assets, such as landed property and movable property (e.g. leasing, sales). While most Japanese local governments largely depend on transfers from central government agencies, they also seek to expand their revenues through locally controlled channels, such as enhancing tax revenue collection, sales, lease and management of municipal properties, and increasing fees and charges (Research Institute for Local Government 2011). In this study, we focus on revenue expansion from sales of municipal facilities. We also use outstanding local government bonds per capita as an indicator for sound financial management. Values of all expense variables are in thousand Japanese Yen (which is equivalent to approximately \$10 U.S.). All variables except the gender representation variable are logged in order to reduce skewedness.

INDEPENDENT VARIABLES: MEASURING THE NPM EFFORT OF MUNICIPALITIES

This study assesses the impacts of NPM reforms on municipal performance. We look at local governments' efforts supporting various NPM-type reforms as an indicator of their effort in backing NPM reforms. MIC's annual survey on administrative reform in local governments (MIC n.d.-b) asks whether or not local governments currently embark on various administrative menus. Such reform menus include review of wage system, outsourcing, cuts in expenditure and revenue expansion, review of organizational structure and management style, human resource development, collaboration with local citizens, promotion of information disclosure and transparency in administrative work. The 2013 version of the survey asks slightly different reform menus from those in the

2014 survey. However, we select reform menus that are common in both survey versions. Then, we particularly look at reform menus that are closely related to the concept of NPM. This led us to select the following six reform items: 1) outsourcing, 2) human resource development, 3) government assets and debts management, 4) organizational structure and management style, 5) collaboration with citizens, and 6) information disclosure and transparency. The survey does not specify definition of each reform menu. The survey asks if a municipality is currently implementing administrative reform in each area (yes or no). Then, it also asks if a municipality sets a specific numeric goal for the reform it selects (yes or no). In fact, most municipalities select “yes” for the first question, which means they embark on the administrative reform. Thus, we particularly look at the second question to measure municipalities’ level of engagement in and commitment to NPM-type reform. We assume municipalities are more committed to NPM reforms if they set any specific numeric indicators for the reform they are planning or implementing. Combining these two questions, we categorized municipalities into three groups: 1) municipalities not implementing given administrative reform menu, 2) municipalities implementing reform without any specific numerical target, and 3) municipalities carrying out reform with a specific numerical goal. We give a value of “0” for the first group, “1” for the second group, and “2” for the third group. This is an ordinal variable. The higher the value, the more commitment a municipality has for administrative reform. Since we examine the above six areas of administrative reform, we repeat the same process for each reform menu. That led us to create an ordinal variable (0, 1, and 2) in each of the six reform areas. Figure 1 shows a graphic percent summary of each variable. Our study is primarily interested in the combined effects of NPM effort on municipal performance. Therefore, we created a factor variable, *NPM reform index*, that captures the overall NPM reform effort of municipalities based on the above six ordinal variables with principal-component factor analysis. Cronbach's alpha is 0.7, which passes a conventional guideline for the reliability of the scale. NPM reform index is an additive index by summing the above six variables. The index ranges from 0 to 12. Higher values indicate more effort for and engagement in NPM reforms. Figure 2 shows a percent summary of *NPM reform index*.

We also examine how reform efforts of municipalities in individual reform affect municipal performance. Therefore, our second independent variable is the above mentioned ordinal variable for an individual reform. Since we are not able to include all six separate reform variables in the same model due to multicollinearity, we decided to focus on 1) outsourcing, 2) government assets and debts management, and 3) organizational structure and management style.

CONTROL VARIABLES

This study controls for other factors expected to influence municipal performance. Such factors include: 1) municipal merger, 2) female mayor or vice mayor, 3) mayor's vote share and reelection times, 4) number of political parties supporting mayor, 5) unemployment rate, 6) senior citizens, 7) prefecture dummy, 8) special status city dummy, and 9) year dummy. Municipal merger is a dummy variable which indicates whether or not a municipality experienced municipal merger after 1999. The central government of Japan carried out a nationwide municipal merger reform from 1999 to 2006, which reduced the number of municipalities from 3,229 in 1999 to 1,821 in 2006 (Yokomichi 2007). This number continued to decrease gradually to 1,718 in 2014 (MIC 2014).ⁱⁱⁱ Merged municipalities gained financial benefits from the central government. In addition, experiencing such pre-funding change causes numerous short-term effects on organizational performance, such as conflicts in organizational rule and norms among merger partners, employee motivation, and time and energy required to get to know different stake holders and citizens (Suzuki 2016). Thus, we expect that municipal merger negatively or positively affects municipal performance (Suzuki and Avellaneda 2016, Steiner and Kaiser 2016, Reingewertz 2012). *Female mayor or vice mayor* is a binary variable which indicates whether or not a municipality has either a female mayor or vice-mayor. Female mayors are very few, with only 21 in 2016 in 1,721 cities, towns or villages (Cabinet Office of Japan 2016). Therefore, we also include female vice-mayors as an indicator for gender representation in executive positions. We expect the gender of mayor or vice-mayor may affect gender representation in managerial positions. It also can affect spending patterns of municipal performance, as previous studies suggest (Chattopadhyay and Duflo 2004, Smith 2014, Holman 2014). *Mayors' vote share* in the last election is a continuous variable, reported as a percentage. We also control for the number of mayor's reelections, as we expect long-term experience as a mayor should influence performance of municipalities (Avellaneda 2009a, b). As many mayoral candidates run without party affiliation, we control for the number of political parties that publicly support the elected mayor. It is a continuous variable, ranging from 0 to 6. We also controlled for socio-economic factors, including percentages for the unemployment rate and number of senior citizens. In addition, we also used a prefecture dummy and a year dummy.

EMPIRICAL STRATEGY

The goal of this paper is to estimate any (negative) effects of NPM reforms on three dimensions of municipal performance (equity, efficiency and effectiveness) by using a panel data of 810 city-level Japanese municipalities from 2013 to 2014. The current data sets cover only two years due to unavailability of some data. We mainly use random-effects models with clustered standard errors at the city-level. We cannot use a fixed-effect model because some variables, such as municipal merger, mayors' vote share, reelection times, and mayor's political party support, do not change across time for most municipalities unless they held elections during the data set period.^{iv} As a robustness check, we estimated pooled OLS and population-averaged regression models.

ANALYSIS AND RESULTS

Table 3 reports results of random effects models for six different dependent variables. Recall that our first explanatory variable is *NPM reform index*, which is a factor variable composed from local governments' efforts for NPM-type reforms in six areas. Model 1 tests how NPM reforms affect equity by using gender representation in managerial positions. The result shows that NPM reforms negatively affect gender representation. However, the result fails to reach a statistically significant level. Models 2-4 test the impacts of NPM on efficiency in municipal spending. In Model 2, we test how NPM influences general administrative costs. Results show the NPM reform index is negatively associated with administrative costs per capita, holding other factors constant (p-value<0.05). The higher a municipality's NPM effort, the lower administrative overhead costs are. Recall that the dependent variable is logged and the independent variable is non-logged. Thus, this is a log-linear model regression. Coefficient of NPM reform index is -0.01. This means that one unit increase in NPM reform index reduces approximately 1 percent of administrative overhead per capita. Municipal merger increases overhead costs (p-value<0.1).

Municipalities managed by a mayor with larger vote share tend to have lower administrative costs (p-value<0.05). Factors, such as unemployment rate and status as a special city, negatively influence administrative costs, holding other factors constant. In the model estimating local government officials, coefficient of *NPM reform index* is negative but not at the statistically significant confidence level. Municipalities that experienced merger and have higher percentages of senior

citizens, which tend to be in rural areas, are likely to have a higher number of local government officials. Unemployment negatively influences the dependent variable (p -value <0.01).

Model 4 tests the impact of NPM reforms on personnel costs. Again, NPM reform index is negative. However, the coefficient is very small and fails to pass statistically significant criteria. Municipalities with more reelected mayors are likely to have higher personnel costs (p -value < 0.05), and cities with special status by law also are likely to record higher personnel costs. The percentage of senior citizens positively influences the dependent variable.

Models 5-6 test the effects of NPM reforms on effectiveness in revenue expansion and financial management. NPM reforms are positively associated with revenue expansion from municipal asset sales. But the coefficient fails to reach the statistically significant level of confidence. NPM reforms are negatively correlated to the amount of outstanding municipal debts. Likewise, however, it fails to pass statistical significant tests. These results suggest NPM reforms do not influence most dimensions of municipal performance covered in this study except administrative overhead costs. We run the same models with pooled OLS regression models, as well as population-averaged regression models. Results show that NPM reforms also negatively affect administrative costs in both models, which confirms the robustness of our result. Results are reported in tables A1 and A2 in appendix. Figure 3 visualized predicted probabilities of administrative costs/capita as the NPM reform index increases. As seen from the figure, increases in NPM reform index leads to lower administrative costs, holding other factors fixed. This confirms our second proposition.

Table 4 reports results from random effects models with individual reform variables as an explanatory variable. Recall that we used ordinal variables for individual reform menus, namely outsourcing, government assets and debts management, and organizational structure and management style. We focus on these three important reform areas, rather than using all six reform menus, in order to avoid multicollinearity. In the first models (Models 1.1., 2.1, 3.1, 4.1, 5.1, and 6.1), we include only the outsourcing variable as an independent variable. The second models use the government assets and debts management variable instead of the outsourcing variable. The third models use the organization and management style variable as an independent variable. Finally, the fourth models use all of these three independent variables.

Results are reported in table 4. Control variables are not reported in the table. In the gender representation model (Models 1.1-1.4), municipalities implementing outsourcing reform are likely to achieve 0.97-1.07 percent lower female representation compared with those who do not implement an administrative reform that includes outsourcing (p -value <0.1) (Models 1.1 and 1.4). Coefficient of municipalities implementing outsourcing reform with numerical targets are negative,

however, it fails to reach a statistically significant level. Results from Models 1.2 and 1.3 do not show any statistically significant results regarding the effects of two specific reforms on gender representation. Models 2.1-2.4 test the impacts of individual NPM reforms on administrative costs. The result of Model 2.1 shows that municipalities implementing outsourcing reform with a specific numerical goal are likely to record lower administrative costs per capita than those municipalities without outsourcing reform ($p\text{-value} < 0.05$). Those embarking on outsourcing reform without numerical goals also record lower overhead costs than those municipalities without outsourcing reform ($p\text{-value} < 0.1$). Municipalities implementing municipal assets and debts management also have lower administrative costs than those municipalities without reform ($p\text{-value} < 0.1$). In the local government official models (3.1-3.4), coefficients of all reform variables do not reach a statistically significant level. In the personnel costs model (4.1-4.4), municipalities having organization and management style reform without numerical targets record slightly higher personnel costs than those without reform ($p\text{-value} < 0.1$). Models 5.1-5.4 show results of revenues from municipal asset sales. Municipalities embarking on outsourcing reform with specific numeric goals obtain more revenues from selling off municipal facilities or assets than those not implementing outsourcing reform ($p\text{-value} < 0.05$). Coefficients of municipalities having government assets and debts management reform are positive for both municipalities with or without numerical specific goals ($p\text{-values} < 0.05$ and 0.1) (Model 5.2). In outstanding municipal debts models (Models 6.1-6.4), municipalities having organizational and management style reform with specific numerical targets record lower outstanding debt amounts compared with those not implementing reform.

To summarize main findings, outsourcing reform without numerical goals negatively affects gender representation. However, the result is significant only at the 90 percent level (Models 1.1 and 1.4). Therefore, it is not certain whether or not NPM-type reforms negatively affect gender representation. With respect to efficiency in municipal spending, outsourcing reform with specific numerical goals increases efficiency in administrative costs (i.e. reducing overhead costs/capita) at the 95 percent level (Model 2.1). Organizational and management style reform increases personnel costs but only at the 90 percent confidence level (Models 4.3 and 4.4). Thus, we cannot conclude that the result provides empirical support for personnel costs. Outsourcing and government assets and debt management reforms increase municipal revenue from assets sale at the 95 percent level (Models 5.1, 5.2, and 5.3). Thus, the results provide an empirical support for our third proposition.

DISCUSSIONS AND FUTURE STUDY

This study assesses the impacts of NPM-type administrative reforms on municipal performance by using a data set of 810 Japanese city-level municipalities from the 2013-2014 period. In this study, our first goal was to test whether NPM reforms influence equity in gender representation in the administrative body or not. Our second goal was to test whether or not NPM reforms increase efficiency in municipal spending. Our third goal was to assess the impacts of NPM reforms on effectiveness in revenue expansion and financial management. After controlling for potential confounding factors, findings show that NPM reforms as a whole are not associated with gender representation and effectiveness in revenue expansion and financial management. However, results show that municipalities conducting NPM reforms with higher commitment are likely to have lower administrative overhead costs than those with less commitment to reform.

Results of analysis testing individual NPM reform efforts suggest a relationship between embarkation of reform and efficiency and effectiveness in municipal performance. Municipalities that have a higher commitment to outsourcing reform are likely to operate at lower administrative overhead costs than those without outsourcing reform commitment. Results also suggest municipalities implementing outsourcing reform with stronger commitment also are likely to gain more municipal revenues from selling municipal assets. Municipalities that carry out reforms on government assets and debt management also are likely to have larger revenue from sales of municipal property. Thus, municipalities' efforts for such individual reforms (outsourcing and government assets and debt management) seem to influence efficiency and effectiveness of municipal performance.

Our study mainly examines immediate impacts of NPM-type reforms on municipal performance in Japanese municipalities due to data unavailability. Future study should expand a data set and examine long-term effects of NPM reforms on performance (Hood and Dixon 2016). Currently, our data set does not contain information about municipalities' prior commitment to NPM reforms before the data set period (2013-2014). Therefore, our results may contain reverse causality. Furthermore, future study should include other factors that may potentially influence municipal performance, such as managerial capacities and quality and political factors, and examine how these factors moderate the impact of NPM reforms on performance.

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TABLES AND FIGURES

TABLE 1, (DESCRIPTIVE STATISTICS)

	Mean	Std.Dev.	Min	Max
Dependent variables				
Gender representation in mid-level managerial position	11.49	7.29	0	44
Administrative costs /capita	67.53	90.89	21.38	1,983.91
Number of local government officials/capita	5.85	1.78	2.57	16.48
Personnel costs/capita	70.36	20.93	32.38	247.94
Revenues from municipal assets sale/capita	1.51	2.89	0.00	53.14
Accumulated municipal debts/capita	447.90	245.01	17.04	4,198.94
Independent variables				
NPM indicator	6.20	1.87	0	12
Administrative reform item				
Outsourcing	1.14	0.46	0	2
Human resource development	1.04	0.43	0	2
Government assets and debts management	1.10	0.55	0	2
Organization and management style	0.99	0.38	0	2
Collaboration with citizen	1.06	0.56	0	2
Information disclosure and transparency	0.87	0.54	0	2
Controls				
Municipal merger	0.53	0.50	0	1
Female mayor or vice mayor	0.04	0.18	0	1
Mayor's vote share (%)	44.00	27.15	0	94.15
Mayor's reelection times	2.07	0.98	1	7
Number of political party supporting mayor	0.84	1.23	0	6
Unemployment rate (%)	6.55	1.65	2.6	18.2
Senior citizens (%)	25.05	5.22	11.7	43.8
Prefecture dummy	21.74	13.04	1	47
Special status city dummy	0.02	0.15	0	1
Year dummy	0.50	0.50	0	1

TABLE 2, (CORRELATION MATRIX)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 Gender representation in mid-level managerial position	1																						
2 Administrative costs /capita	-0.04	1																					
3 Number of local government officials/capita	-0.03	0.31	1																				
4 Personnel costs/capita	-0.05	0.28	0.89	1																			
5 Revenues from municipal assets sale/caaita	0.00	0.40	0.11	0.14	1																		
6 Accumulated municipal debts/capita	-0.03	0.19	0.55	0.53	0.10	1																	
7 NPM indicator	-0.01	-0.07	-0.12	-0.09	-0.03	-0.06	1																
8 Outsourcing	-0.01	-0.07	-0.11	-0.08	0.01	-0.07	0.66	1															
9 Human resource development	-0.01	-0.04	-0.08	-0.09	-0.04	-0.08	0.65	0.31	1														
10 Government assets and debts management	0.04	-0.05	-0.04	-0.01	0.01	0.04	0.62	0.38	0.24	1													
11 Organization and management style	-0.03	0.00	0.01	0.04	-0.01	0.00	0.54	0.30	0.27	0.20	1												
12 Collaboration with citizen	-0.01	-0.05	-0.12	-0.11	-0.04	-0.07	0.69	0.32	0.36	0.27	0.22	1											
13 Information disclosure and transparency	-0.03	-0.07	-0.09	-0.09	-0.06	-0.06	0.67	0.26	0.39	0.21	0.27	0.37	1										
14 Municipal merger	-0.06	0.06	0.27	0.22	-0.04	0.33	0.07	0.03	0.04	0.06	0.08	0.04	0.04	1									
15 Female mayor or vice mayor	0.04	-0.04	-0.09	-0.04	-0.01	-0.06	0.04	0.04	0.06	0.01	-0.02	0.09	-0.02	-0.05	1								
16 Mayor's vote share (%)	0.03	-0.06	-0.12	-0.08	-0.01	-0.09	0.07	0.06	0.05	0.02	0.03	0.09	0.04	-0.03	0.07	1							
17 Mayor's reelection times	-0.02	-0.02	-0.02	-0.01	-0.01	-0.09	-0.03	-0.02	0.04	-0.04	-0.02	-0.05	-0.03	-0.08	-0.07	-0.05	1						
18 Number of political party supporting mayor	0.10	-0.06	-0.13	-0.09	-0.04	-0.11	0.04	0.05	0.03	0.02	0.02	0.03	0.02	-0.07	0.07	0.12	0.12	1					
19 Unemployment rate (%)	-0.05	0.07	-0.04	-0.01	0.02	0.08	-0.13	-0.11	-0.09	-0.14	-0.02	-0.08	-0.04	-0.11	-0.02	-0.02	-0.01	-0.01	1				
20 Senior citizens (%)	-0.12	0.26	0.73	0.69	0.05	0.63	-0.11	-0.11	-0.11	-0.01	0.03	-0.12	-0.09	0.30	-0.12	-0.13	-0.09	-0.17	0.09	1			
21 Prefecture dummy	-0.01	-0.09	0.10	0.14	-0.03	0.10	-0.04	-0.04	-0.03	0.02	-0.01	-0.06	-0.03	0.14	-0.02	0.06	-0.03	-0.03	0.08	0.16	1		
22 Special status city dummy	-0.02	-0.06	-0.11	-0.05	0.03	0.13	0.11	0.08	0.10	0.08	0.05	0.10	0.04	-0.01	0.10	0.06	-0.03	0.03	0.01	-0.12	0.01	1	
23 Year dummy	0.06	-0.01	0.01	0.02	0.03	0.01	0.05	-0.03	0.05	0.05	0.01	0.11	-0.03	0.00	0.01	-0.01	0.06	0.04	0.00	0.00	0.00	0.00	1

TABLE 3, (NPM AND MUNICIPAL PERFORMANCE: RESULTS FROM RANDOM EFFECTS MODELS)

	Gender representation	Administrative costs	Local government officials	Personnel costs	Revenues from municipal assets sale	Accumulated municipal debts
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Independent variable						
NPM reform index	-0.07	-0.01**	-0.00	-0.00	0.00	-0.00
	(0.08)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)
Controls						
Municipal merger	0.23	0.06*	0.05***	0.03*	-0.07	0.21***
	(0.53)	(0.03)	(0.01)	(0.01)	(0.04)	(0.02)
Female mayor or vice mayor	0.19	-0.06	0.00	0.00	0.11*	0.00
	(0.79)	(0.05)	(0.01)	(0.01)	(0.06)	(0.01)
Mayor's vote share (%)	0.01*	-0.00**	0.00	-0.00	-0.00	-0.00
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Mayor's reelection times	-0.29*	0.01	0.00	0.00**	0.00	0.00
	(0.18)	(0.01)	(0.00)	(0.00)	(0.02)	(0.00)
Number of political party supporting mayor	0.12	-0.01*	0.00	0.00	-0.02	0.00
	(0.13)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
Unemployment rate (%)	0.04	-0.03***	-0.02***	-0.03***	-0.03*	0.01
	(0.17)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Senior citizens (%)	-0.12**	0.05***	0.04***	0.04***	0.01*	0.05***
	(0.06)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Special status city dummy	-1.44	-0.22***	0.00	0.11***	0.30***	0.66***
	(0.99)	(0.05)	(0.04)	(0.03)	(0.11)	(0.10)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture dummy	Yes	Yes	Yes	Yes	Yes	Yes
Constant	14.80***	3.07***	0.88***	3.53***	0.82***	5.01***
	(2.42)	(0.12)	(0.07)	(0.07)	(0.19)	(0.11)
Observations	1,619	1,619	1,619	1,619	1,610	1,619
Number of municipality	810	810	810	810	809	810
R-sq within	0.0506	0.0275	0.0309	0.0853	0.00478	0.0488
R-sq between	0.278	0.539	0.652	0.630	0.156	0.738
R-sq overall	0.261	0.500	0.652	0.627	0.107	0.737

Robust standard errors in parentheses

Standard errors are clustered by municipality

*** p<0.01, ** p<0.05, * p<0.1

FIGURE 1, (PERCENT SUMMARY OF ADMINISTRATIVE REFORM EFFORT)

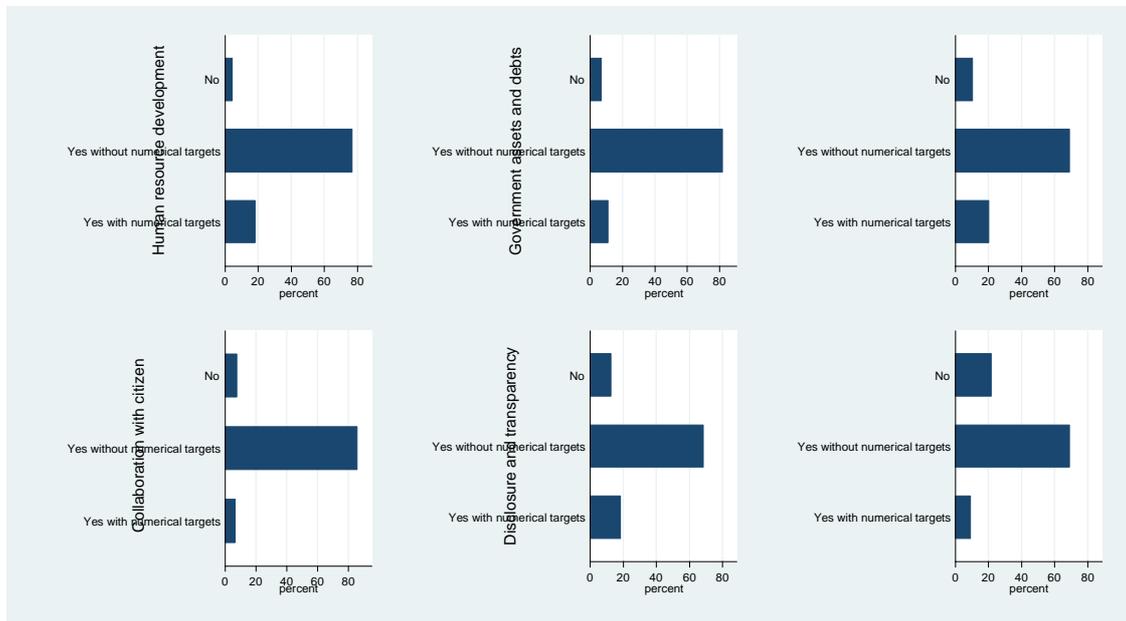


FIGURE 2, (PERCENT SUMMARY OF NPM INDEX)

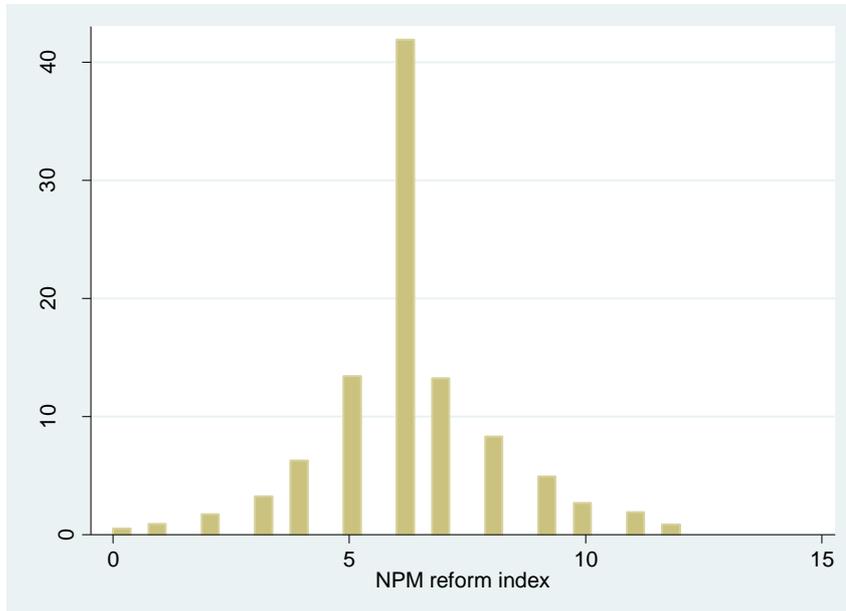
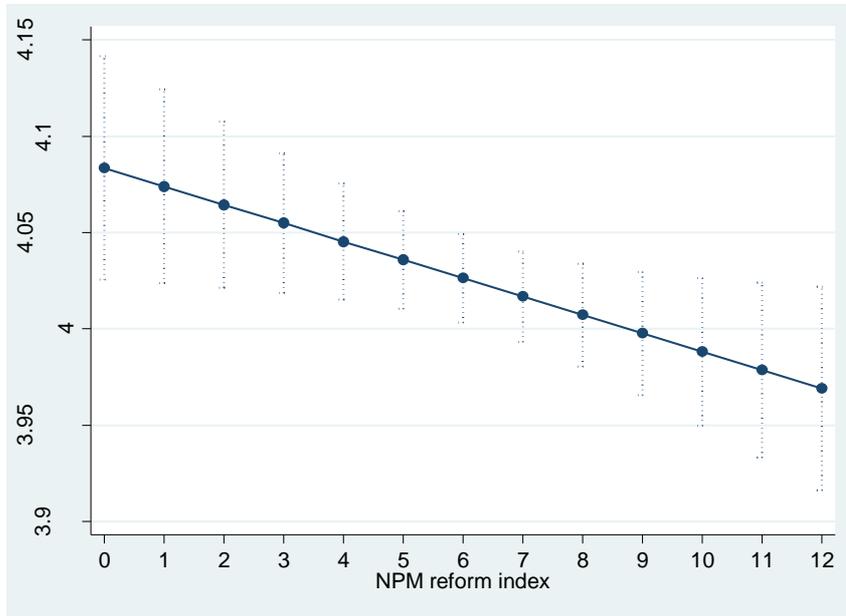


FIGURE 3, (PREDICTED PROBABILITIES OF ADMINISTRATIVE COSTS/CAPITA AS NPM REFORM INDEX CHANGES)



APPENDIX

Appendix 1

TABLE A1, (NPM AND MUNICIPAL PERFORMANCE: RESULTS FROM POOLED OLS REGRESSION MODELS)

	Gender representation	Administrative costs	Local government officials	Personnel costs	Revenues from municipal assets sale	Accumulated municipal debts
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Independent variable						
NPM reform index	-0.10	-0.02***	-0.01**	-0.00	0.00	0.00
	(0.11)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
Controls						
Municipal merger	0.18	0.06*	0.05***	0.03**	-0.06	0.21***
	(0.53)	(0.03)	(0.01)	(0.01)	(0.04)	(0.02)
Female mayor or vice mayor	0.01	-0.05	-0.01	0.03	0.11*	-0.03
	(1.02)	(0.05)	(0.03)	(0.03)	(0.07)	(0.07)
Mayor's vote share (%)	0.01	-0.00*	-0.00*	-0.00	0.00	-0.00
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Mayor's reelection times	-0.36*	0.02*	0.01*	0.02**	0.00	-0.02
	(0.21)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
Number of political party supporting mayor	0.36*	-0.02**	-0.01	-0.00	-0.02*	0.01
	(0.19)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Unemployment rate (%)	0.04	-0.03***	-0.02***	-0.03***	-0.03*	0.01
	(0.17)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Senior citizens (%)	-0.12**	0.05***	0.04***	0.04***	0.01	0.05***
	(0.06)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Special status city dummy	-1.52	-0.20***	0.01	0.11***	0.31***	0.65***
	(1.04)	(0.05)	(0.04)	(0.03)	(0.11)	(0.10)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture dummy	Yes	Yes	Yes	Yes	Yes	Yes
Constant	14.78***	3.12***	0.92***	3.52***	0.85***	5.04***
	(2.44)	(0.12)	(0.08)	(0.08)	(0.19)	(0.11)
Observations	1,619	1,619	1,619	1,619	1,610	1,619
R-squared	0.26	0.50	0.66	0.63	0.11	0.74
Robust standard errors in parentheses						
Standard errors are clustered by municipality						
*** p<0.01, ** p<0.05, * p<0.1						

Appendix 2

TABLE A21 (NPM AND MUNICIPAL PERFORMANCE: RESULTS FROM POPULATION-AVERAGED REGRESSION MODELS)

	Gender representation	Administrative costs	Local government officials	Personnel costs	Revenues from municipal assets sale	Accumulated municipal debts
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Independent variable						
NPM reform index	-0.07 (0.08)	-0.01** (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.01)	-0.00 (0.00)
Controls						
Municipal merger	0.23 (0.52)	0.06* (0.03)	0.05*** (0.01)	0.03* (0.01)	-0.06* (0.04)	0.21*** (0.02)
Female mayor or vice mayor	0.18 (0.78)	-0.06 (0.05)	0.00 (0.01)	0.00 (0.01)	0.11* (0.06)	0.00 (0.01)
Mayor's vote share (%)	0.01* (0.01)	-0.00** (0.00)	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Mayor's reelection times	-0.29* (0.17)	0.01 (0.01)	0.00 (0.00)	0.00** (0.00)	0.00 (0.02)	0.00 (0.00)
Number of political party supporting mayor	0.13 (0.13)	-0.01* (0.01)	0.00 (0.00)	0.00 (0.00)	-0.02 (0.01)	0.00 (0.00)
Unemployment rate (%)	0.04 (0.17)	-0.03*** (0.01)	-0.02*** (0.01)	-0.03*** (0.01)	-0.03* (0.01)	0.01 (0.01)
Senior citizens (%)	-0.12** (0.05)	0.05*** (0.00)	0.04*** (0.00)	0.04*** (0.00)	0.01* (0.00)	0.05*** (0.00)
Special status city dummy	-1.45 (0.98)	-0.21*** (0.05)	0.00 (0.04)	0.11*** (0.03)	0.30*** (0.10)	0.66*** (0.10)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture dummy	Yes	Yes	Yes	Yes	Yes	Yes
Constant	14.80*** (2.37)	3.07*** (0.12)	0.88*** (0.07)	3.53*** (0.07)	0.83*** (0.18)	5.01*** (0.10)
Observations	1,619	1,619	1,619	1,619	1,610	1,619
Number of municipality	810	810	810	810	809	810

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1