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## Recruitment Practices for Engineering and Technical Professionals in Tokyo Special Wards

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# **Recruitment Practices for Engineering and Technical Professionals in Tokyo Special Wards**

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## **1. Introduction**

### **1.1. The situation surrounding local government professionals**

This study examines the current situation and challenges in the recruitment and training of professional human resources in Japanese local governments, focusing mainly on the 23 wards of Tokyo.

In general, the role of government is not only changing dramatically, but also becoming more complex and sophisticated. As a result, the skills required by people who make up the government are also becoming more sophisticated. Of course, the Japanese government is not exempt from these global trends. In particular, Japan's local governments are required to have a high level of "expertise" because their role is becoming much larger due to continuous decentralization reforms (Japan Municipal Research Center 2020).

However, in recent years, Japan has faced major challenges in the recruitment and training of civil servants, who play an important role in society. First, there is an insufficient number of applicants for civil servant positions; moreover, the quality of personnel who are interested in becoming civil servants is declining. In addition, some local governments are unable to meet their recruitment needs because of the small number of applicants.

Second, with regard to the training of civil servants, it has become difficult for them to develop talented people within their own organizations and to pass on the skills necessary to perform their duties. Unlike the image of a strong Japanese bureaucracy claimed in traditional Japanese studies conducted mainly in the United States, the number of civil servants in Japan is extremely small according to global standards (Maeda 2014). In Japan, human resource development is conducted through on-the-job training within the organization. Therefore, when the number of organizational members is small and the workload is excessive, supervisors cannot spend time training

their subordinates.

The problems described above are particularly apparent in the recruitment and training of professional personnel engaged in specialized and technical work, rather than in clerical work. For example, the shortage of technical civil servants, such as architects and civil engineers, became a concern in reconstruction projects following the Great East Japan Earthquake in 2011. In the case of the current outbreak of a new coronavirus infection, a major bottleneck is the shortage of staff at public health centers who are in charge of PCR testing and other infectious disease countermeasures<sup>1</sup>.

In this study, we discuss the current situation and issues regarding the recruitment and training of professional personnel in local governments who are closely connected to our daily lives. Although local governments have many professional personnel, including administrative staff as well as technical personnel, the actual situation of securing and training such professional personnel has not been clarified. In addition, while there are studies on the principles and consequences of the behavior of civil servants with expertise from a political science perspective, there are only a few studies that have clarified the actual situation from the perspective of recruiting and training professional human resources. Therefore, it would be a meaningful attempt to share information on how public sector professionals are recruited and trained, which is still necessary under the conditions of the declining population, low birthrate, aging society, and critical financial situation that Japan is facing today.

The professional human resources examined in this study are architectural and civil engineering personnel. This is because architecture and civil engineering occupations account for the majority of professionals in local governments<sup>2</sup>, and they are the core

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1 The “critical situation” of public health centers has been reported in various media reports (e.g., Asahi Shimbun, January 8, 2021 morning edition).

2 Of the 5,874 general engineering staff in the entire special wards, 1,811 are in construction and

professionals who support our safe daily lives through the maintenance and management of public facilities and countermeasures against large-scale disasters<sup>3</sup>.

As a method of survey and research, we used public data related to architectural and civil engineering jobs to understand the current situation, as well as interviews and e-mail questionnaires to the departments of human resources and engineering at several local governments. The specific targets of the interviews were several wards in the 23 wards of Tokyo. The reason for the selection of these interview targets is to show that even the special wards of the capital city of Tokyo, where various conditions are in place and the recruitment and training of human resources are thought to be easy, face challenges in securing and training professional human resources. In addition, the unique hiring methods implemented by the 23 wards of Tokyo may provide a solution to the problems of securing and fostering professional human resources that are occurring throughout Japan.

The remainder of this paper is organized as follows. First, the shortage of engineers in local governments is confirmed using public statistics. Next, the local government initiatives that are making characteristic attempts to recruit engineers are introduced. Finally, the results and challenges of these efforts are presented.

## **1.2. Literature review**

The most important aspect of human resource management in any organization, whether in the public or private sector, is to attract people to the organization and to recruit and select the necessary human resources (Leisink & Steijin 2008: 118).

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2,099 are in civil engineering, accounting for more than 60% of the total general engineering staff.

3 Electrical and mechanical occupations are two technical occupations for which prior research is scarce. Takemura (2019) discusses the state of the electrical and mechanical professions, based on a review of previous studies and a questionnaire survey.

Recruitment is the process of sourcing labor from outside the organization to meet internal labor demands (Yashiro 2019). This process has focused on making the pool of potential recruits as large as possible so that the organization can select worthy candidates (Beardwell & Wright 2002; Rynes & Barber 1990; Kanai 1994)<sup>4</sup>.

In recent years, however, it has become increasingly difficult for governments to attract and hire talented people as civil servants (Lavigna & Hays 2004). In particular, compared to private organizations, it is more difficult for government agencies and non-profit organizations to secure personnel with sufficient expertise (Collins 2008)<sup>5</sup>. Regarding the status of securing and developing such professional and technical staff, many studies have explored the reasons why professional and technical staff employed by public organizations worked for such organizations. For example, Rose & Gordon (2010) conducted a survey of employees of public organizations responsible for planning and maintenance of roads and bridges in Australia. The results showed that the reasons for professional and technical staff to work for the organization, such as reasons for joining the organization and intention to leave, differed by age group. In other words, it is necessary to adopt different recruitment and retention strategies for different generations in order to recruit and retain talented professionals and technical staff in the public sector.

In addition, the issue of securing and fostering professional and technical personnel

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- 4 Japanese firms tend to try to make their candidate pool as large as possible in order to recruit talented people. However, in recent years, there has been a trend in the private sector to narrow down the number of applicants by attaching clear conditions to their applications (Hattori 2017).
  - 5 The main reason why it is more difficult for the public sector to hire professionals and technicians than the private sector is probably due to the issue of compensation. In addition, following the trend of so-called "NPM" type reforms (Osborne & Gaebler 1992), services traditionally provided by government organizations are being outsourced, making it difficult to retain professional and technical personnel within government organizations in the first place.

is closely related to professional education at the school education level. Therefore, in the fields of civil engineering and architecture, for example, many studies are being conducted on the recruitment and training of professional personnel. For example, in order to solve the shortage of future professional and technical personnel, efforts are being made to increase the attractiveness of civil engineering (Habbarad & Habbarad 2009), and a report on how the public sector is coping with the competition with private companies for professional and technical personnel (Glagola & Nichols 2001). In addition, there are a number of practical studies that are rooted in practice, such as (Habbarad & Habbarad 2009) and (Glagola & Nichols 2001).

There are significant differences in the civil service and education systems in each country, and therefore, there is a lot of context-dependent and practical discussion on the recruitment of professional and technical personnel. Since this paper focuses on the Japanese case of the Tokyo Special Wards, I would like to give an overview of what kind of research has been conducted on professional and technical occupations in Japan.

In Japanese public administration studies, the professional and technical professions have been studied with a focus on their aspects as technocrats. In other words, the central research interest was to elucidate the political influence of the expertise and networks of technocrats. The Japanese technocrats have maintained their political influence by taking advantage of the given budget, regulatory authority, and political and financial networks (Shindo 2002; Nishikawa 2002). The consequences of the influence of the technocrats are said to have caused, for example, the delay in public works reform and the drug-related AIDS case (Shindo 2002).

While there has been research on the political consequences of technocrats and expertise, there has also been research on the semantic content of expertise. Expertise is one of the basic concepts that public administration has explored, and Fujita (2008)

is one of the studies that went into the semantic content of this concept. Fujita's research focuses on the state of autonomy within and outside of administrative organizations and its policy consequences for technical officers as professionals. He also discusses the recent reform of the civil service system and the nature of expertise, and points out that the expertise that administrative officials can have is limited to "professional literacy" now that scientific knowledge has become more sophisticated.

Regarding the "expertise" of professional and technical personnel in local governments, which is the subject of this paper's analysis, there are, for example, arguments that classify expertise in terms of qualification (Fujita 2002) and arguments that point out the ambiguity of professional and technical positions in local governments (Fujita 2020). In addition to this, there have been discussions on classifying "expertise" in terms of qualification, ease of changing jobs, and acceptability outside the municipality (Inatsugu 2011). In addition, Kawate (2006) is a study that analyzed the treatment of professional and technical personnel in local governments<sup>6</sup>.

As I have pointed out so far, in Japanese public administration studies, the study of professionals and technicians has focused on their political influence and the semantic content of their "expertise". In other words, the practical issues of securing and fostering professional and technical personnel, which are also considered in overseas public administration studies, have not been considered much. In recent years, there have been calls for a shortage of professional and technical personnel in Japan's local governments, and progress has finally been made in clarifying the actual situation of securing and training professional and technical personnel in local governments. A

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6 Uchikoshi (2016) conducts a study of professional and technical personnel in local government for a specific administrative field. Specifically, Uchikoshi deals with municipal officials in the field of animal administration, with a focus on veterinarians.



series of studies by Motomichi Otani is an important study that clarified the actual situation of securing and training professional and technical personnel in local governments (Otani 2019b; 2020ab). According to a series of studies by Otani, it has become increasingly difficult for Japanese local governments to secure and train professional and technical personnel in recent years. On the other hand, Matsui (2020) points out that there is not a simple shortage of professional and technical personnel in local governments, but rather an uneven distribution. In other words, it suggests that rather than blindly increasing the number of professional and technical personnel, attempts to eliminate maldistribution may resolve the situation of a shortage of professional and technical personnel.

To summarize the discussion so far, in Japanese public administration, the main targets of analysis of professionals and technicians have been their political influence and the meaning of “expertise” . Therefore, the actual situation of securing and fostering professional and technical personnel has not been sufficiently clarified. This paper attempts to elucidate the actual situation of the recruitment and training of professional and technical personnel in the Tokyo Special Wards, Japan. Since there is still insufficient knowledge on the actual situation of recruitment and training of professional and technical personnel in local governments, it is significant that this paper analyzes the case of the Tokyo Special Wards.

### **1.3. Recruitment of local government specialist**

What is the situation for securing technical and professional personnel in local governments? Considering the situation nationally, it is very difficult for local governments to secure professional personnel. Figure 1 shows the number of examinees and successful applicants for competitive examinations in municipalities nationwide. Evidently, the number of examinees has decreased significantly over the

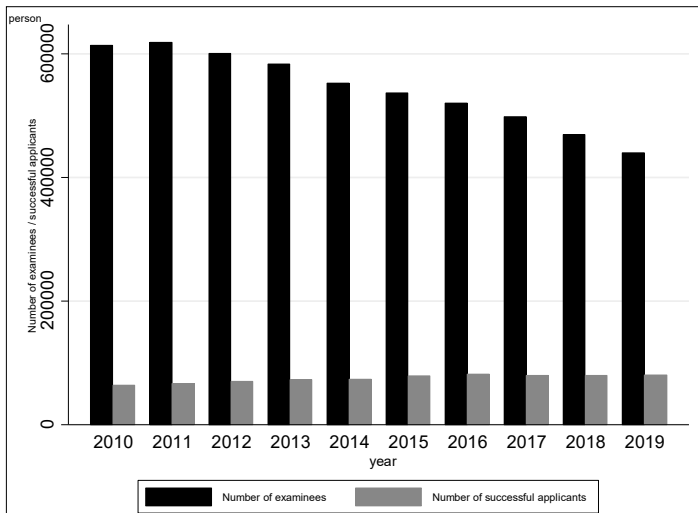
past 10 years. On the other hand, the number of successful applicants increased from 66,426 in FY2010 to 78,049 in FY2019. This is partly due to the fact that local governments are sending out more successful candidates than the demanded number in anticipation of the successful candidates' withdrawal, which is probably a sign that they are struggling to secure human resources. Therefore, as shown in Figure 2, the magnification of competitive examinations over the past decade has also been on a downward trend.

Although this data do not cover only technical personnel, we can understand how local governments as a whole face difficulties in securing human resources. Therefore, what is the situation for local governments in terms of securing human resources for technical positions only? According to an independent survey conducted by Motomichi Otani, a public administration scholar, securing technical personnel is even more difficult than securing administrative personnel. According to Table 1, the average multiplier for competitive examinations conducted in the recruitment category of "civil engineering" in FY2017 was 2.5 times for prefectures, 2.6 times for ordinance-designated cities, 3.6 times for other cities and wards, and 2.3 times for towns and villages, indicating considerable difficulty compared to clerical positions (Otani 2019b: 9). Although the focus here is on "civil engineering", it is particularly difficult for local governments to secure professional human resources, partly because of the substantial demand for architectural and civil engineering positions.

It is not enough to have a sufficient number of technical and professional staff to fill the positions. In other words, it is necessary to train hired personnel so that they can perform specialized tasks within the organization. What is the situation regarding the training of technical and professional staff? Local governments face difficulties in training and securing human resources. In the earlier survey that confirmed the status of securing the capacity of technical personnel in local governments, of the 200

organizations that responded to the questionnaire, 53 organizations for architectural positions and 64 organizations for civil engineering positions recognized that they were unable to secure the technical skills of their staff (Japan Municipal Research Center 2020: 276). As for the reasons for this lack of technical personnel skills, it has been cited that it is difficult to share and pass on technical skills to the next generation, and that there is no room to improve technical skills due to the increase in workload and qualitative changes (Japan Municipal Research Center 2020: 277, 294). The problem of skill shortage among technical personnel is particularly pronounced in smaller municipalities. In short, the small overall number of technical personnel cast a large shadow on the availability of technical skills.

**Figure 1: Number of examinees and successful applicants for competitive examinations in local governments**

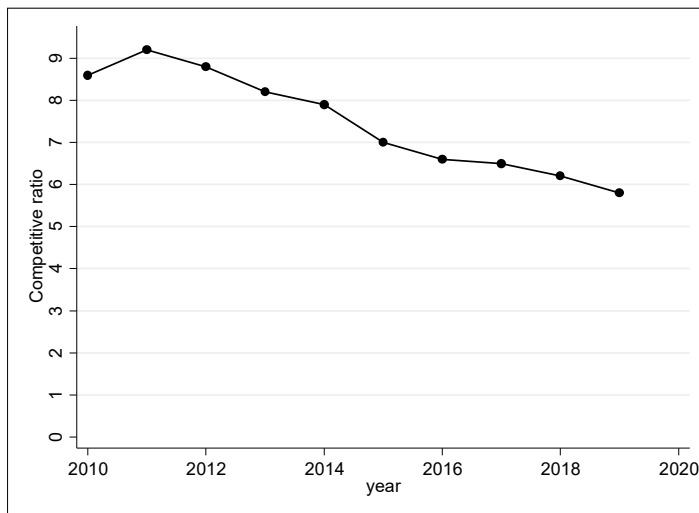


Source:

Compiled by the Author from the “Results of Survey on Working Conditions of Local

Governments in (2019)” .

**Figure 2: Average competitive ratio for competitive examinations in municipalities**



Source:

Compiled by the Author from “Results of Survey on Working Conditions of Local Governments in 2019.

**Table 1: Results of “Civil Engineering” recruitment examinations conducted in 2010 and 2017**

FY	Civil engineering employment examination					Recruitment examinations for general administrative positions			
	Applicants	Examinees	Successful examinees	successful examinees who withdrew	Average Competitive ratio	Withdrawal rate among successful examinees	Average Competitive ratio	Withdrawal rate among successful examinees	
<b>Prefectures</b>	FY2010	3,756	2,565	691	110	4.9	8.7%	14.1	16.6%
	FY2017	3,483	2,569	1,022	186	2.5	13.6%	6.9	20.9%
	change	▲ 273	4	331	76	▲ 2.4	4.9%	▲ 7.2	4.3%
<b>Ordinance-designated cities</b>	FY2010	1,909	1,387	470	22	4.0	6.5%	12.6	13.8%
	FY2017	1,555	1,060	460	29	2.6	6.7%	9.1	16.4%
	change	▲ 354	▲ 372	▲ 10	7	▲ 1.4	0.2%	▲ 3.5	2.6%
<b>Other cities &amp; special wards</b>	FY2010	6,030	4,411	864	86	5.3	9.9%	14.5	7.4%
	FY2017	5,459	4,192	1,265	239	3.6	18.8%	10.2	10.9%
	change	▲ 571	▲ 219	401	153	▲ 1.7	8.9%	▲ 4.3	3.5%
<b>Towns &amp; Villages</b>	FY2010	129	93	25	3	3.8	15.0%	10.1	4.2%
	FY2017	362	292	88	19	2.3	17.1%	6.8	9.9%
	change	233	199	63	16	▲ 1.5	2.1%	▲ 3.3	5.7%

Source:

Prepared by the Author Based on Excerpts from Otani (2020: 52), Figure 5.

#### 1.4. Circumstances surrounding specialized human resources for special wards

Although many local governments nationwide face challenges in securing and developing professional human resources, why does this study focus on the special wards? According to Nozomi Matsui, a public administration scholar, the discourse on the shortage of professional human resources in local governments that has been cried out in recent years, including the report of the 32<sup>nd</sup> Local Government System Research Council, indicates a situation of “absence” rather than a strict “shortage” of professional human resources (Matsui 2020: 57-58). In other words, the smaller the size of a municipality, the more likely it is that professional human resources are not assigned to it, and the more unevenly distributed the professional human resources are.

If that is the case, then do special wards, the most populous urban municipalities in

Japan, face the challenge of securing and training professional human resources? The population of special wards will continue to grow until 2035, and the elderly population will reach its peak in 2055 (Kuchōkai Institute for Research and Study 2020: 10-11). These demographic trends in the special wards are very different from the national trends, where the population has already entered a phase of decline and the elderly population will peak by 2040. In other words, the special wards are relatively fortunate when viewed from a national perspective.

However, despite the seemingly blessed situation, the unique circumstances surrounding the special wards pose challenges that other municipalities do not have to deal with. Being the most densely populated municipality in Japan means that the maintenance and management of public infrastructure that supports the lives of these people is a heavy burden. In addition, due to the large absolute number of elderly population and the small range of population decline, it is necessary not only to maintain and manage the public infrastructure but also to respond to new demands. Furthermore, the importance of countermeasures against emerging infectious diseases in densely populated areas, such as the current new coronavirus infections, and countermeasures against large-scale disasters, such as the earthquake that is expected to hit the Tokyo metropolitan area in the future, are also being studied (Kuchōkai Institute for Research and Study 2020: 44-46, 54-55). Therefore, it is highly likely that special wards will find it difficult to adequately respond to these administrative demands (Kuchōkai Institute for Research and Study 2020: 86-87).

## **2. Status of securing professional human resources in special wards**

### **2.1. Assignment status of architectural and civil engineering positions**

Now, we check the status of securing professional human resources (architectural and civil engineering staff) in special wards. First, as a prerequisite, we check how many architectural and civil engineering staff are assigned to each ward. Figure 3 shows the trend of the number of construction and civil engineering staff in the special wards using the data from the “Local Government Capacity Management Survey” conducted by the Ministry of Internal Affairs and Communications. As of April 1, 2020, there were 1,855 construction workers and 2,318 civil engineering workers in special wards as a whole. Comparing the number of construction and civil engineering staff, the number of civil engineering staff is higher, and the number of civil engineering staff is about 1.25 times the number of construction staff. The number of civil engineering workers is approximately 1.25 times that of architectural workers. The number of architectural staff increased by 453 (from 1,402 to 1,855) between 2005 and 2020, while the number of civil engineering staff increased by 536 (from 1,782 to 2,318).

As Matsui (2020: 58) points out, there is an increase or decrease depending on the demand for each type of professional personnel<sup>7</sup>. Figure 4 shows the trend in the total number of employees in local governments from 1995 to 2020. Although the data includes occupations other than engineering, it shows that the total number of municipal employees continued to decline from 1995 to 2010. In contrast to this decline in the total number of employees, the slight increase in the number of

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7 In interviews with each of the special wards, it was recognized that reducing the number of employees at the same pace as before, would be difficult from the perspective of maintaining the administrative structure.

employees in recent years can be interpreted as a radical change from the sharp reduction in the number of employees.

Next, we check the status of the architectural and civil engineering positions in each ward. Figure 5 shows the changes in the number of architectural and civil engineering staff in each of the special wards from 2005 to 2020. While it is natural that the number of architectural and civil engineering staff differs, there are variations in the ratio of architectural and civil engineering staff and the degree of increase or decrease in each ward. First, wards with a large population tend to have a large number of architectural and civil engineering staff (Figure 6 and 7)<sup>8</sup>. The Setagaya ward, which has the largest population, has the largest number of architectural and civil engineering staff, while the Chiyoda ward – with the smallest population – also has a certain number of architectural and civil engineering staff. In other words, regardless of the size of the population, a minimum number of architectural and civil engineering positions is necessary to provide administrative services<sup>9</sup>.

Second, the ratio of architectural staff to civil engineering staff varies greatly in each ward. Figure 8 shows the ratio of the number of architectural staffs to the number of civil engineering workers in each ward in 2020. The ratio of construction workers to civil engineering workers is generally around 70 %–80%, but unlike other wards, the Chiyoda, Shinjuku, and Kita wards have more construction workers. On the other hand,

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8 Figures 6 and 7 show scatter plots using the number of building and civil engineering employees in 2020 and the population of each ward in 2019. The correlation coefficients between the variables are 0.8626 for the number of construction workers and the population of each district, and 0.9353 for the number of civil engineering workers and the population of each district.

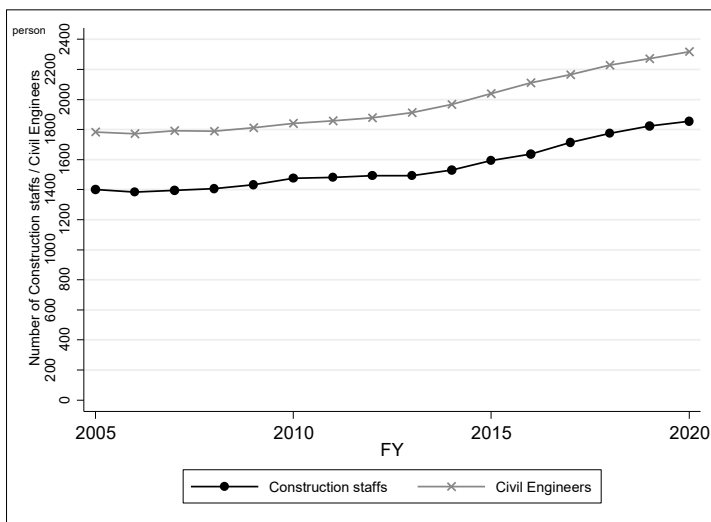
9 On the other hand, the situation where the minimum number of personnel is secured for the different population sizes of the wards needs to be examined from the perspective of the historical history of personnel administration in special wards and the metropolitan financial adjustment system (Tsuchiya 2011).



in Shinagawa, Katsushika, and Edogawa wards, the number of construction workers is approximately half that of civil engineering workers. The demand for each type of occupation differs in each ward.

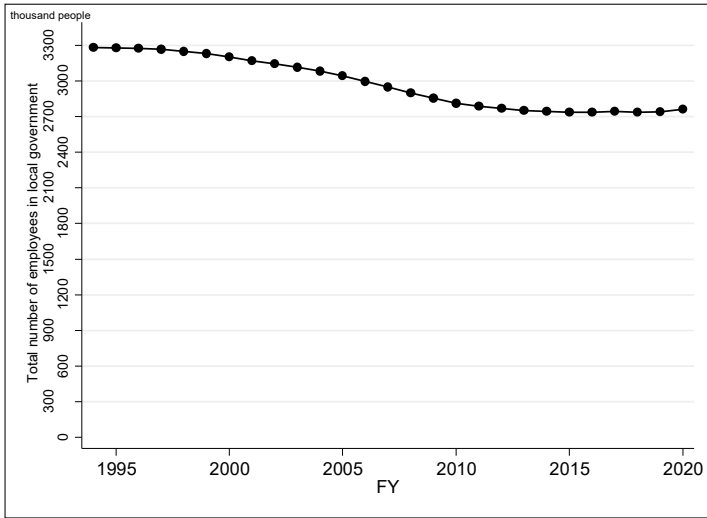
Third, the ratio of increase/decrease in the number of architectural and civil engineering jobs also differs in each district. Figure 9 shows the ratio of increase/decrease in the number of architectural and civil engineering staff in 2020 compared to 2005. In this graph, for example, if the ratio of increase/decrease is set to 1, the number of employees doubles from 2005 to 2020. As can be seen from the graph, the ratio of increase/decrease for each job category differs greatly in each ward. On the one hand, there are wards such as Chiyoda (civil engineering), Meguro (architecture), Toshima (architecture), and Adachi (architecture and civil engineering), where the number of employees has hardly increased, compared to 2005. On the other hand, it can be confirmed that some wards have significantly strengthened their engineering staffing structure, as is particularly evident in the Nakano (civil engineering) and Katsushika (architecture) wards.

**Figure 3: Number of employees in architectural and civil engineering positions in special wards**



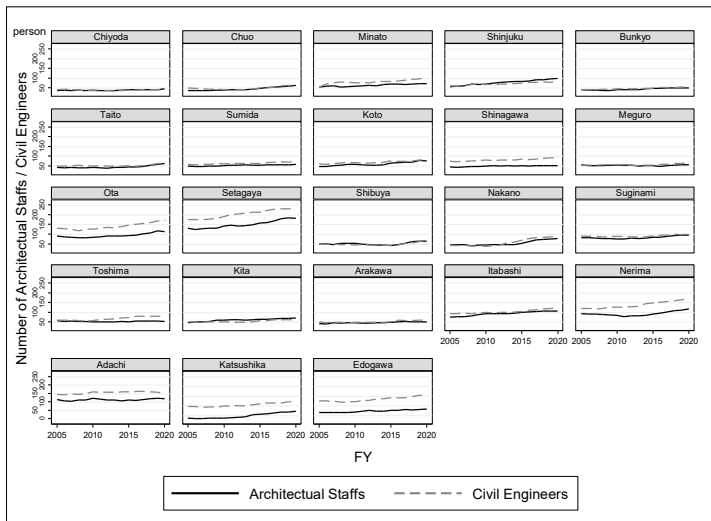
Source: Compiled by the author from “Capacity Management Survey of Local Governments,” Table 4, Number of Employees by Job Category (General Administration Division) (Hokkaido to Okinawa Prefecture), each year’s edition.

**Figure 4: Total number of employees in local governments**



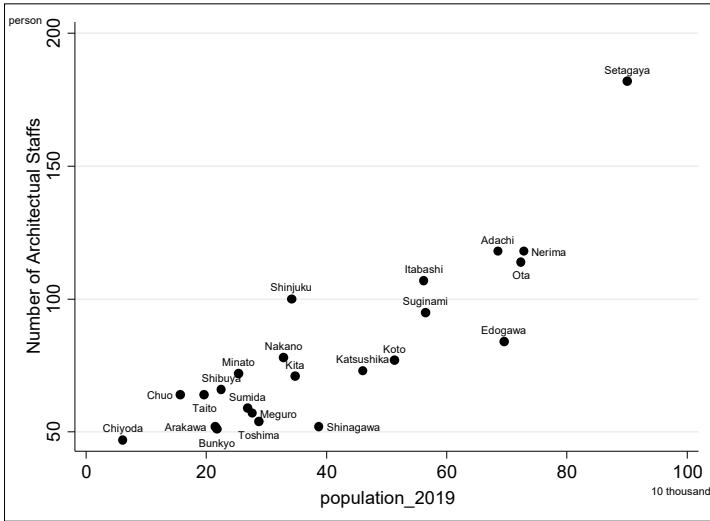
Source: Compiled by the author from “Overview of the Results of the FY2020 Local Public Entity Capacity Management Survey,” local public entity capacity management survey.

**Figure 5: Allocation of architectural and civil engineering positions in each special ward**



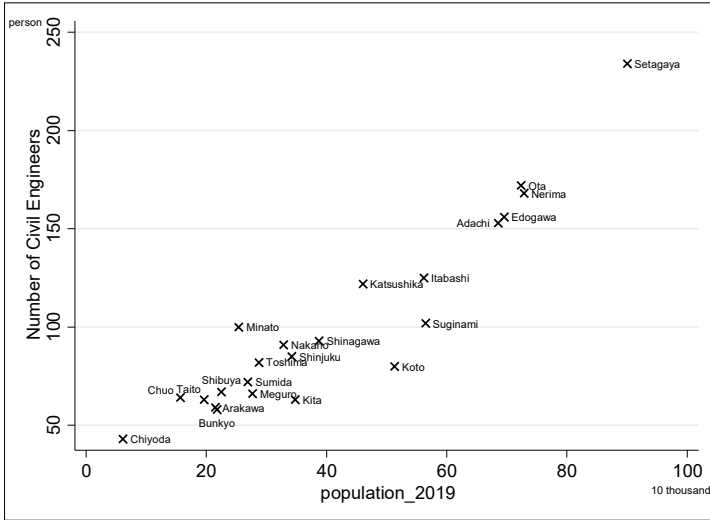
Source: Compiled by the author from “Overview of the Results of the FY2020 Local Public Entity Capacity Management Survey,” local public entity capacity management survey.

**Figure 6: Relationship between architectural jobs and population in each special ward**

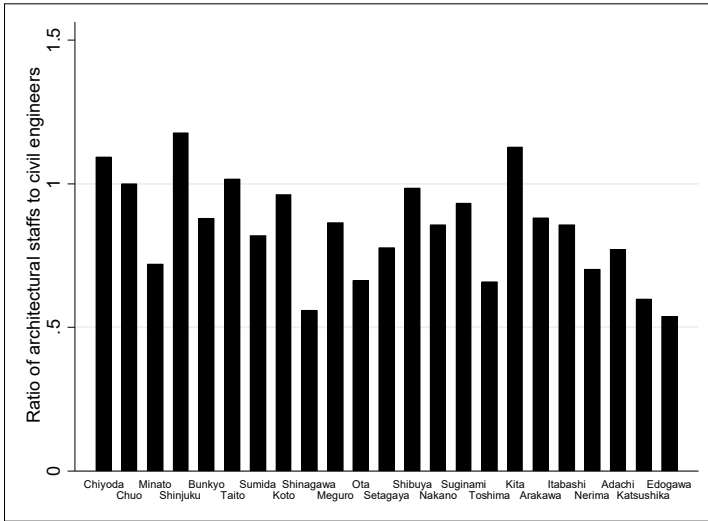


Source: Compiled by the author from “Capacity Management Survey of Local Public Entities,” Table 4, Number of Employees by Job Category (General Administration Division) (Hokkaido to Okinawa Prefecture), each year’s edition, and “Population and Households in the 23 Wards” (website of the Conference of special wards).

**Figure 7: Relationship between civil engineers and population in each special ward**

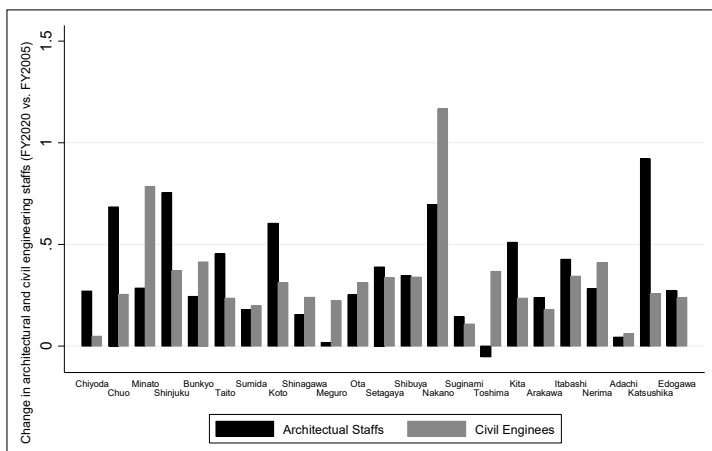


Source: Compiled by the author from “Capacity Management Survey of Local Public Entities,” Table 4, Number of Employees by Job Category (General Administration Division) (Hokkaido to Okinawa Prefecture), each year’s edition, and “Population and Households in the 23 Wards” (website of the Conference of special wards).

**Figure 8: Ratio of architectural staffs to civil engineers (2020)**

Source: Compiled by the author from “Overview of the Results of the FY2020 Local Public Entity Capacity Management Survey,” local public entity capacity management survey.

**Figure 9: Change in architectural and civil engineering staffs (FY2020 vs. FY2005)**



Source: Compiled by the author from “Overview of the Results of the FY2020 Local Public Entity Capacity Management Survey,” local public entity capacity management survey.

## 2.2. Current status of recruitment and attempts to secure human resources for architectural and civil engineering positions

Next, we consider the situation of securing architectural and civil engineering positions in special wards. The special wards are the only ones in Japan that have formed a special ward personnel and welfare affairs union and established a personnel committee based on the partial administration union system. This joint processing of administrative work related to personnel administration makes it possible for special wards to secure human resources as one (Matsui 2020: 60-61)<sup>10</sup>.

<sup>10</sup> For a study that analyzes the process by which the Tokyo metropolitan government and the special wards gradually weakened their unity and strengthened the unity of the special wards with each other in terms of personnel administration, see Tsuchiya (2011) above.



First, we check the status of the recruitment examinations for architectural and civil engineering positions in the special wards as a whole. Table 2 shows the latest status of recruitment examinations for FY2020. Overall, 16,860 people applied for the exam, 9,566 people took the first exam, and 2,342 people passed the final exam, compared to the 1,276 people expected to be hired. The final passing rate for those who underwent the first examination was 24%.

The number of applicants for clerical positions is 14,339, which is approximately 85% of the total number of applicants for Class I examinations (general system) in special wards. The number of applicants for the exam is 8,121, which is 57% of the total number of applicants, indicating that there are many people who will not actually take the exam. The passing rate for the first examination was 59%; similarly, the passing rate for the second examination was 79%. The final pass rate for those who underwent the first examination was 21%.

On the other hand, if we look at the technical positions covered by this study, the number of applicants for architectural positions is 160, while the number of applicants planned to be hired was about 50. The number of applicants for architectural positions was 160, while the number of planned hires was approximately 50. The number of examinees was 101, and the ratio of applicants to examinees was 63%, which is not much different from that of clerical positions. However, the pass rate for the first exam was 87% and that for the second exam was 89%, showing a marked contrast to the clerical positions. In addition, the final pass rate for those who took the first exam was 40%. As in the case of architectural positions, civil engineering positions also tend to have high pass rates for applicants. The number of applicants for civil engineering positions is 432, compared to the expected number of 48, and the number of examinees is 201, for an examination rate of 47%. The pass rate for the first examination was 90%, the second examination was 86%, and the final pass rate for the first examination

was 33%.

Next, we checked the changes in the ratio of applicants passing the examinations for architectural and civil engineering positions. Figure 10 shows a time-series graph of the ratio of applicants who passed the exam for architectural and civil engineering positions in the Special Administrative Region I recruitment exam. For reference, the ratio of applicants who passed the exam for administrative positions is also shown. This chart shows that the ratio of applicants who pass the exam to those who pass it, is on a long-term downward trend. In addition, the pass rate for architectural and civil engineering positions is around 2-3 times lower than that for clerical positions. It is evident that special wards as a whole are struggling to secure staff, and it can be seen that architectural and civil engineering staff are having a hard time being recruited, just as there is a nationwide shortage of technical staff<sup>11</sup>.

**Table 2: Implementation Status of the Special Administrative Region I Recruitment Examination (General System) (FY2020)**

Examination Category	Number of people to be hired	Number of applicants (A)	1st stage employment examination				2nd stage employment examination			pass rate**
			Examinees(B)	(B)/(A)	Successful applicants	pass rate	Examinees	Successful applicants	pass rate	
General Administrative Staffs	906	14,339	8,121	57%	4,791	59%	2,197	1,741	79%	21%
Civil Engineers	48	432	201	47%	180	90%	77	66	86%	33%
Architectural Staffs	50	160	101	63%	88	87%	45	40	89%	40%
<b>Total*</b>	1276	16,860	9,566	57%	6,038	63%	2,932	2,342	80%	24%

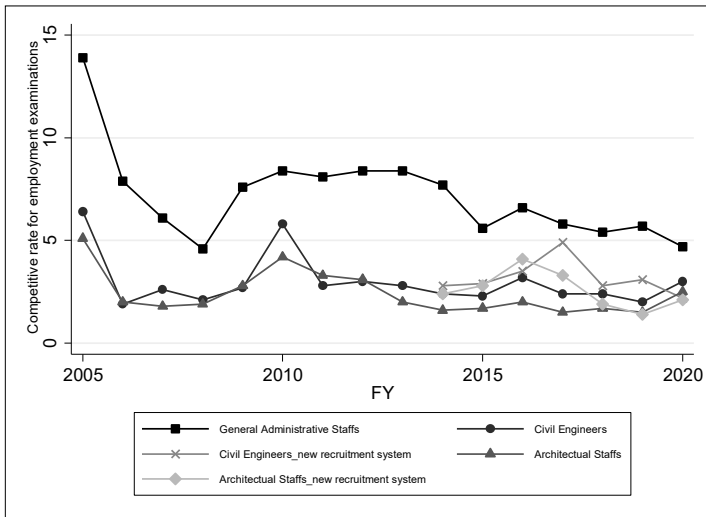
Note: \* includes all occupations other than clerical work, civil engineering, landscape gardening (civil engineering), and architecture. (Note) \* includes all positions other than clerical work, landscape gardening (civil engineering), and architecture. \*\* The pass rate is the ratio of applicants who passed the second examination to those who

11 Matsui (2020: 62) points out that the lengthening of the examination period through “wide-area cooperation” is one of the reasons for applicants who apply for jobs in the private sector to also decline taking the exam.

took the first examination.

Source: Compiled by the author from “FY 2020 Class I Recruitment Examinations (General Method)” (the website of the Special Wards Personnel Commission).

**Figure 10: Competitive ratio of employment examinations (General Administrative, Architectural and Civil Engineering Staffs)**



Source: Prepared by the author based on the “Implementation Status of Recruitment Examinations (Selection) for Special Ward Officials” (website of the Special Wards Personnel Commission).

Thus, even in the special wards that occupy the central part of Tokyo, it is difficult to secure human resources for architectural and civil engineering positions. For this reason, special wards are taking various measures for technical personnel who face difficulties in securing human resources (Partial Affairs Association of Tokyo Metropolitan Area Cities for Personnel Affairs and Welfare Services 2020: 20-21). The

first was to expand the scope of the recruitment examination. In the cleaning business, limited experienced recruitment for mechanical and electrical positions had been conducted since 2005, but in 2007, recruitment examinations and selections were started for other positions as well, in order to utilize knowledge and experience gained in the private sector, etc., as an immediate asset. Furthermore, in 2016, the upper age limit for eligibility was raised from under 28 to under 32 for clerical work and the so-called four major technologies among the Class I examination categories. These measures have helped expand employment opportunities for special ward officials.

In 2004, the date of the first round of Class I examinations was moved up by about one month to secure qualified personnel. In 2004, the date for the first round of Class I examinations was moved up by about one month to secure qualified personnel, from the viewpoint of placing greater emphasis on the personality of the candidate, the number of interviews was increased to two for administrative positions, and a problem-based essay examination was introduced for technical positions. Later, in 2008, the number of interviews was increased to two for technical positions, further reinforcing the emphasis on personality in the content of the examinations. Furthermore, in 2013, the final acceptance announcement date for engineering positions, which are “difficult to secure,” was moved earlier than for other examination categories, in an attempt to reduce the percentage of applicants who withdrew from the examination after applying to private companies. Since then, the timing of recruitment examinations has changed as required, based on the recruitment schedules of private companies.

Another important change in the content of the examinations, which is a measure to secure technical positions, is the “new recruitment system for civil engineering and architecture” which has been in effect since 2014. In addition to the professional examinations, this system requires an aptitude test that is “also used in recruitment examinations for private companies” in order to “make it easier for those who want to

work for private companies and those who do not have enough time to prepare for the examinations” to take the examinations instead of the liberal arts examinations and essay examinations required in the general system<sup>12</sup>. Under the new system, the first round of the examinations will be completed in 1 h and 30 min, and the aptitude test in 27 min, compared to 2 h for the general test, 1 h and 30 min for the specialized test, and 1 h and 20 min for the essay test. The introduction of this new system was effective in securing the number of examinees<sup>13</sup>. Thus, by changing the examination schedule and content to a “reduced examinee burden” system<sup>14</sup>, it can be seen that even special wards are struggling to secure qualified personnel.

The third is to strengthen recruitment publicity activities related to technical positions. In recent years, wide-area and urban municipalities have been actively providing recruitment information through brochures and websites (Otani 2019a: 151-152). In special wards as well, in order to evoke an image of what it is like to work in a special ward in candidates, not only is information presented on what kind of municipality the special ward is and what kind of personnel it is looking for, but also information on the work content and time schedule for each department and job category is provided in pamphlets and on websites, including photos of staff. In

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12 Information on the 2020 recruitment examination for special wards (Tokyo 23 wards) officials I (new system for civil engineering and construction).

13 The Special Wards Personnel Commission, keeping in mind that human resources will flow to the private sector due to the increased demand for construction related to the Tokyo Olympics and Paralympics, conducted the test for this new method in September in addition to the regular recruitment conducted in May every year (Nikkan Kensetsu Kogyo Shimbun, December 25, 2014).

14 According to Otani (2019a), local government hiring examinations are changing from an “academic ability-oriented” to a “personality-oriented” and even “examinee burden-reducing” approach. Traditionally, these changes were aimed at securing significant human resources to run local governments in the era of decentralization, but in recent years, the hiring methods have changed to cope with the difficulty of securing human resources in local governments.

particular, for technical staff, pamphlets, and other materials continuously feature job descriptions and attractiveness, as shown in Figure 11, indicating that they are making efforts to secure human resources<sup>15</sup>.

In addition, the government is actively implementing measures to secure examinees, such as holding information sessions jointly with the 23 special wards (Figure 12) and participating in information sessions organized by universities, university co-ops, and preparatory schools for qualifying examinations<sup>16</sup>. In light of the difficulty in securing candidates for these positions, the government is also holding a separate “Technical Recruitment Forum” for technical positions (Figure 13) and holding school information sessions for candidates for technical positions<sup>17</sup>.

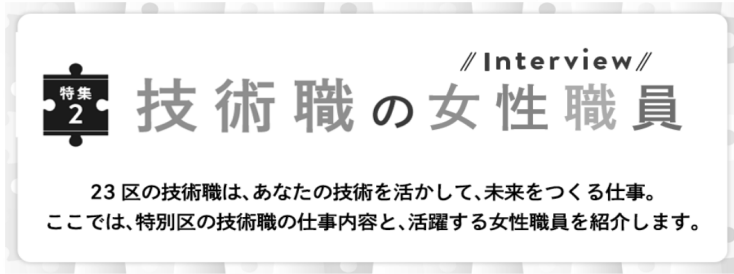
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15 Every year, a special website is created to promote the appeal of the engineering profession (Special Site for the Joint Briefing Session and Technical Recruitment Forum for the 23 Special Wards, the Special Wards Personnel Commission, [http://www.tokyo23city.or.jp/saiyo/2020/23forum2020/index.html#banner\\_area](http://www.tokyo23city.or.jp/saiyo/2020/23forum2020/index.html#banner_area)).

16 As for the joint briefing sessions for the 23 wards for FY2021 recruitment, despite the new coronavirus disaster, they have decided to conduct the sessions online in order to secure candidates (Special Site for the Joint Briefing Session and Technical Recruitment Forum for the 23 Special Wards, the Special Wards Personnel Commission, [http://www.tokyo23city.or.jp/saiyo/2020/23forum2020/index.html#banner\\_area](http://www.tokyo23city.or.jp/saiyo/2020/23forum2020/index.html#banner_area)).

17 The results for fiscal 2019 show that they have held information sessions at so-called science universities and participated in industry seminars for technical jobs conducted by qualification exam prep schools and private human resources information service companies (see the website of the Personnel Committee of the Special Administrative Region, “Results of Information Sessions for Universities and Other Institutions in Fiscal 2018”: <http://www.tokyo23city.or.jp/saiyo/college/h30.htm>).

Figure 11: Examples of special features for technical staff on the website (FY2021)



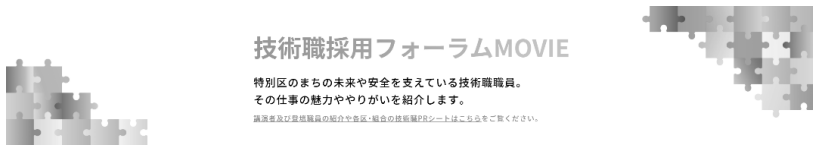
Source: Prepared by the author from the Special Wards Personnel Commission website.

Figure 12: Special website for the 23 special wards joint information session and forum for recruiting technical personnel (FY2021)



Source: Prepared by the author from the Special Wards Personnel Commission website.

Figure 13: Technical staff Recruitment Forum (FY2021)



Source: Prepared by the author from the Special Wards Personnel Commission website.

### **2.3. Situation in the Tokyo Special Wards where the interviews were conducted<sup>18</sup>**

Based on the situation regarding the securing of architectural and civil engineering personnel in the special wards as a whole that we have clarified so far, we now listen to the voices of the wards that we interviewed. First, we examine the status of securing professional human resources in each of the wards we interviewed. On the other hand, it became clear that there is not a complete lack of concern about securing professional human resources and that each ward has its own perception of various issues.

In particular, when it comes to securing professional human resources, there is competition with other entities, and they seem to compete with each other for the small pie of technical jobs. For example, when it comes to securing technical personnel, competition generally occurs in the private sector. As is the case with other occupations, the popularity of civil servants declines during boom times and people flow to the private sector, while the popularity of civil servants rises during recessions. For this reason, many wards recognize that there will be competition with private companies for technical positions, especially during boom times. In addition, as a special circumstance in recent years, the increase in demand for engineering positions due to the hosting of the Tokyo Olympics and Paralympics may make it difficult to secure personnel, especially for architectural positions. In addition, as a result of the competition for these technical positions, problems may arise not only in terms of the number needed, but also in terms of the quality of available human resources.

However, the competition for these technical jobs is not limited to the private sector. In other words, there is competition with other municipalities in the special section or in the neighborhood for the recruitment of technical personnel. For example, some

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<sup>18</sup> The contents of this section are based on an interview survey of each special ward.



wards are already in competition with other wards and expect that it will be difficult to secure technical positions in the future. In addition, in the peripheral wards bordering other municipalities, there is competition with neighboring municipalities in Chiba and Kanagawa prefectures, which may cause some people to withdraw.

Recruitment examinations in the special wards are collectively conducted by the Special Wards Personnel Commission, but each ward hiring. Therefore, for each ward to secure talented human resources, it is necessary to take measures to ensure that the final applicants choose their own ward as their first choice. In addition to the measures taken by the special wards as a whole, what measures are being taken by the wards interviewed to secure technical personnel?

The first is to provide recruitment information unique to each ward. Apart from the recruitment pamphlets of the Special Wards Personnel Commission, each ward prepares its own recruitment pamphlet with its own unique flavor. In addition, each ward holds its own recruitment information sessions, and recruitment-related events separate from the 23 wards' joint information sessions. For example, in Suginami Ward, a recruitment event called "Suginami Recruit Festival (Sugifes)" is continuously held by young staff volunteers. This event is an "unofficial job-hunting student support event by Suginami Ward employees" that is held "from the perspective of job hunters"<sup>19</sup>. Young employees who were job hunters until recently, provided consultation on various questions that job hunters aiming to become civil servants have, and this is thought to play a role in supplementing the information provided in formal information sessions. Although each ward has its own initiatives for this kind of interaction with young employees, the "Suginami Recruitment Festival" is worthy of special mention

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19 According to the website of the "Suginami Recruit Festival" (<https://sugifes.wixsite.com/sugifes-2020>), the festival has been held every year since 2010, as far as we can confirm from the website.

because it is a continuous and large-scale event.

The second was the internship program in each ward. The purpose of the internships is to give prospective public servants a concrete image of what it is like to work in a special ward through work experience. Those who are not interested in public service itself but are only interested in the compensation will enter the special wards and receive a reality shock due to the gap between their image of working and what they had imagined, which may cause them to lose their commitment to the organization and, in some cases, may even lead to them leaving the organization. To avoid such a situation, it is important to deepen the understanding of public services through work experience. For example, in Toshima City, universities accept undergraduate and graduate students for five to ten days during the summer vacation period as an internship program. The departments that accept students vary depending on the year of the project, but various departments from planning and general affairs to culture, tourism, and child-rearing support, accept students<sup>20</sup>.

The third is the implementation of a unique recruitment system. Among the special wards, only the Edogawa Ward has its own unique recruitment system. Edogawa Ward hires people who wish to work only in Edogawa Ward in order to hire enthusiastic people who want to contribute to the Edogawa Ward government, not people who think that “any ward is fine as long as I can find a job<sup>21</sup>” . The difference in the recruitment flow from the other 22 wards is shown in Figure 14. Specifically, those who pass the recruitment examination conducted by the Special Wards Personnel Commission are placed on the list of candidates for employment, in the order of their performance. Of

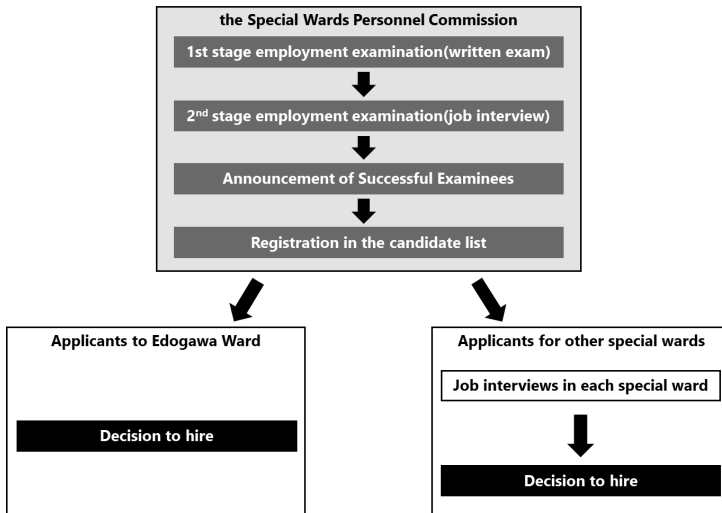
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20 “Introduction of Toshima City’s internship program” homepage (<https://www.city.toshima.lg.jp/031/kuse/jinji/2004091844.html>).

21 Edogawa Ward Employee Recruitment Guide (<https://www.city.edogawa.tokyo.jp/e011/kuseijoho/saiyoboshu/shokuinsaiyo/guide.html>).

these candidates, all those who entered only Edogawa Ward as their preferred ward when applying for the examination to the Special Wards Personnel Commission, will be presented to Edogawa Ward. On the other hand, those who wish to apply to other wards are required to enter up to three choices of their preferred wards, which will be taken into consideration and presented to each ward, where they will be interviewed and selected. By implementing this unique recruitment system, it is possible to secure talented human resources and prevent mismatches caused by the inability to work in the ward of one’s choice<sup>22</sup>.

**Figure 14: Process from application to employment**



(Source) “FY2021 Edogawa Ward Employee Recruitment Guide,” p. 11.

22 In an interview with the department in charge of human resources in Edogawa Ward, the real feeling in the field is that by hiring on a unique single-application system, they have already succeeded in eliciting commitment to the ward from the time of training for new appointments.

### **3. Status of professional human resource development in Tokyo Special Wards**

#### **3.1. Efforts to develop professional human resources throughout the Tokyo Special Wards**

As long as talented people are hired, this does not mean that hired people will naturally become proficient in their work. In addition, in the public sector, which is a prime example of a Japanese organization with “membership-type”<sup>23</sup> employment practices, human resource development after hiring is crucial. Even in technical positions, where people with a certain degree of academic expertise related to the job are hired, the importance of human resource development is the same as in any other occupation.

To develop human resources for these technical positions, personnel exchanges with other local governments, various training programs, and on-the-job training (OJT) are being implemented nationwide. In particular, small-scale local governments tend to have fewer opportunities for building and civil engineering professionals to study through their work, as there are fewer large-scale construction projects (Furuya 2020: 114). Therefore, external organizations, such as training institutions established by other local governments or regional governments, are utilized (Matsui 2020: 63).

How do special wards conduct human resource development for technical personnel? What is unique about the efforts of the special wards is that joint training is conducted at the Special Ward Staff Training Institute established by the Partial Affairs Association of Tokyo Metropolitan Area Cities for Personnel Affairs and Welfare Services. A wide range of training is provided, from basic training courses for first-time

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23 “Membership-based employment” refers to the employment practice of entering into a “membership contract” with an organization without defining detailed job descriptions (Hamaguchi 2009).

employees to knowledge of laws and regulations related to the work they are in charge of, examination of specific cases, and OJT (Matsui 2020: 64). To give one specific example, among the specialized training courses, the training course for building supervisors in the field of urban development was implemented on a trial basis and was so well received that it was decided to be implemented on a full scale. This is due to the fact that there is a shortage of qualified first-class architects and building supervisors in the special wards<sup>24</sup>.

### **3.2. Situation in the Tokyo Special Wards where the interviews were conducted<sup>25</sup>**

To develop excellent technical personnel, non-routine training at the Special Ward Staff Training Institute is insufficient. Rather, OJT was conducted through daily work performance in each ward to which the individual technical staff belongs, and career design of what kind of technical staff should be developed through personnel policies such as personnel transfers. We now look at the efforts to develop human resources for technical personnel in the wards covered in the interview survey.

The first is training to acquire the knowledge and skills necessary for technical positions. In addition to having employees participate in specialized training at the Training Institute for Special Ward Officials, OJT is also provided in the workplace of each ward in line with the content of their work. In addition, in order to acquire knowledge of new technologies, they are encouraged to actively participate in external technical seminars conducted by private companies, and technical staff other than those in charge are also given the opportunity to observe the actual use of such technologies, thereby sharing knowledge and skills.

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24 Tosei Shimpo (August 30, 2011).

25 The contents of this section are based on an interview survey of each special ward.

Second is the encouragement of the acquisition of qualifications. For qualifications that contribute to the execution of work based on technical expertise, the company provides incentives to acquire such qualifications by partially subsidizing the cost of training and courses. For example, for architectural positions, the company encourages employees to become first-class architects and building standard compliance judges (building inspectors); for landscaping positions, the company encourages employees to obtain at least the first level of landscape architecture construction management. In addition, to deepen their understanding of urban planning, they encourage their employees to obtain a chief real estate transaction officer certification, and to deepen their understanding of asphalt and concrete, they encourage their employees to obtain a level 2 civil engineering construction management certification.

The third is career design to cultivate expertise as technical personnel. With regard to career design, the transfer policy differs from ward to ward, but many wards conduct personnel transfers so that young employees can have a broad experience in departments where the relevant technical positions may be assigned during their first 10 years of employment, so that they can have a bird's eye view of the entire business. For this reason, some wards have longer intervals between personnel transfers compared to clerical positions, and some wards have standardized personnel transfers, such as having employees experience three different locations in 10 years. In addition, if they have a specific job in mind that they want a particular technical staff member to be engaged in in the future, they may assign the staff member to a related job at an early stage.

#### **4. Challenges and prospects for securing and developing professional human resources in Tokyo special wards**

So far, we have clarified the current status of securing and fostering professional human resources in special wards. Finally, I present the challenges and prospects for securing and fostering professional human resources in special wards.

The first issue facing special wards in terms of securing professional human resources is the decline in the quantity and quality of professional human resources. As mentioned above, at present, the demand for specialized human resources in special wards has been met. However, not only are we struggling over the long term to secure candidates for technical positions, but also the private sector, neighboring municipalities other than the special wards, and even special wards are competing with each other for the precious pie of specialized human resources. Some local governments are already unable to meet the demands of technical personnel, even after recruiting several times a year<sup>26</sup>. Although they may not have the same sense of urgency as other local governments in securing professional human resources, it will only be a matter of time before the situation of difficulty in securing professional human resources comes to special wards.

The second issue that special wards face with regard to the development of professional human resources, is the problem of technical succession due to the small number of technical positions and the distorted age structure. Figure 15 shows the age structure of architectural professionals in the wards for which data were provided and

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26 In Shiga Prefecture, for example, since 2012, the prefecture has been using “special recruitment” in October to fill the recruitment quota that cannot be secured through the regular June recruitment alone. However, in 2017, the final number of successful applicants for the regular recruitment and the special recruitment did not reach the quota (Nikkei Cross Tech, March 9, 2020).

in the special wards as a whole. The horizontal axis shows the age groups (the first age group is 22-25 years old, and thereafter the age groups are divided into 5-year intervals), and the vertical axis shows the number of employees in each age group, but it can be seen from the graph that the number of employees in each age group itself is small. The graph also shows that the number of employees in each age group is small, and that the middle-ranking employees in their 40s and 50s, who play a central role in the organization, are in a large valley due to the effects of reduced hiring and other factors, resulting in a distorted age structure. Although the situation may differ from ward to ward, the age structure of the wards for which the data were provided is particularly distorted compared to the trend for the special wards as a whole. The special wards have already shown a sense of crisis, in that the skills required for technical positions are not being passed on to the younger employees who will be responsible for the next generation, due to this situation.

Third, as special wards face difficulties in securing and developing specialized human resources, a possible way to cope with these difficulties would be to further strengthen the coordination and cooperation among special wards. As it has already become difficult to secure professional human resources nationwide, the report of The 32<sup>nd</sup> Local Government System Research Council has indicated a policy of “joint utilization” of professional human resources (The 32<sup>nd</sup> Local Government System Research Council 2020: 14).

Prior to these discussions (for example, in the Nara Prefecture) the prefectural government and municipalities in the prefecture that wish to participate in the program jointly administered the employment examination (Otani 2020a: 38-39). In this so-called “Nara model,” the prefectural government and participating municipalities jointly administer the first round of liberal arts examinations and specialized examinations, and each candidate takes the second round of examinations administered



by each municipality based on his or her performance in the examinations and his or her desire at the time of application<sup>27</sup>.

In addition, from 2020, prefectures will increase the number of technical staff who are difficult to secure in smaller local governments, and a scheme to secure them collectively as a new “group of technical staff” has been launched<sup>28</sup>. When prefectures increase the number of technical staff in order to secure a shortage of technical staff in times of peace and medium- to long-term dispatchable staff in times of large-scale disasters, local governments will be provided with local financial measures to cover the personnel costs of the increased staff.

In the midst of this trend of “joint utilization” of professional human resources, special wards already have a rich history of “wide-area cooperation” in securing and training technical personnel (Matsui 2020). In general, in order for diverse administrative organizations to carry out administrative activities through mutual cooperation and collaboration, the “place” where the various organizations and people involved in the collaboration gather, the “people” who are the staff for the collaboration, and the “system” as formal and informal rules that govern such collaborative relationships play important roles (Ito, ed. 2019). In this regard, if we consider the “joint utilization” of specialized human resources in special wards, we can see that the Special Wards Personnel Commission has been established under the Partial Affairs Association of Tokyo Metropolitan Area Cities for Personnel Affairs and Welfare Services, and that the special ward is not only engaged in collective recruitment of human resources but also in human resource development at the Special

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27 The website of the “Nara Prefectural and Municipal Civil Engineering Personnel Recruitment Joint Examination” (<http://www.pref.nara.jp/42115.htm>).

28 “Strengthen the System for Municipal Support and Medium to Long-Term Dispatch by Enhancing Technical Staff” ([https://www.soumu.go.jp/main\\_content/000722257.pdf](https://www.soumu.go.jp/main_content/000722257.pdf)).

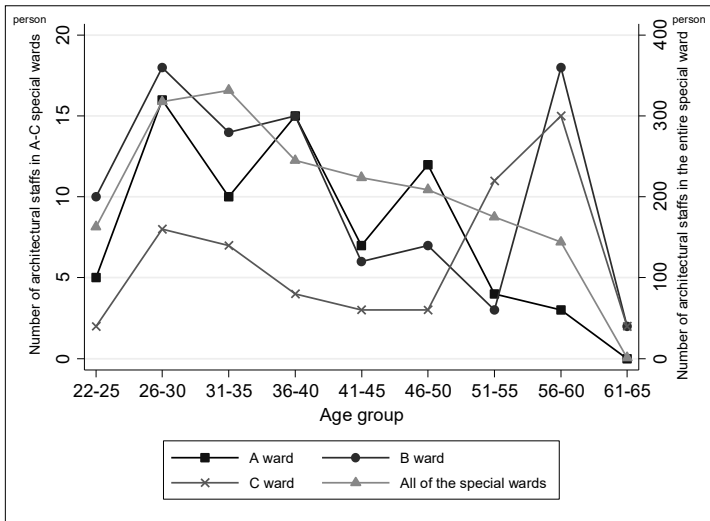
Ward Staff Training Institute. This has already been mentioned previously. In addition, there is a unified approach to the selection of managers, and because of the historical background, there is also a basic unification of salaries and other aspects of treatment. In other words, there are “places” and “people” for the “joint utilization” of specialized human resources, and the “system” that regulates such cooperation has been developed to a certain extent. It can be said that the conditions that form the basis of cooperation for the “joint utilization” of specialized human resources in the special wards, are outstanding compared to other municipalities.

Certainly, from the perspective of respecting local autonomy, the personnel administration of hiring and training the human resources required by each ward on its own responsibility is a fundamental part of local autonomy. However, the above-mentioned scheme of “joint utilization” by professional personnel does not in any way damage the autonomy of each ward. This does not mean that all specialized personnel should be pooled and utilized in all special wards, but rather that cooperation should be promoted for those roles that require specialized personnel to be handled in a broad and standardized manner. For example, in response to the crisis of decreasing the number of technical personnel who are responsible for the maintenance and management of aging social infrastructure, so-called “construction technology centers” have been established across a wide area to provide technical support to local governments, develop human resources, and order infrastructure inspections on a regional basis (Kenmochi 2020).

Furthermore, the “joint utilization” of professional human resources through such coordination and cooperation is not a passive stopgap measure to cope with the “supply crisis” in the age of limited resources. Rather, in the special wards, which currently have more favorable conditions than other municipalities, this kind of collaboration and cooperation is nothing but a proactive and future-oriented attempt to secure

administrative resources to not only stably provide administrative services to citizens but also to develop creative and ingenious local autonomy in the coming “age of resource constraints.”

**Figure 15: Age structure of construction workers (wards A-C, all special wards)**



Source: Prepared by the author based on materials provided by each special ward and by the Kuchōkai Institute for Research and Study.

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