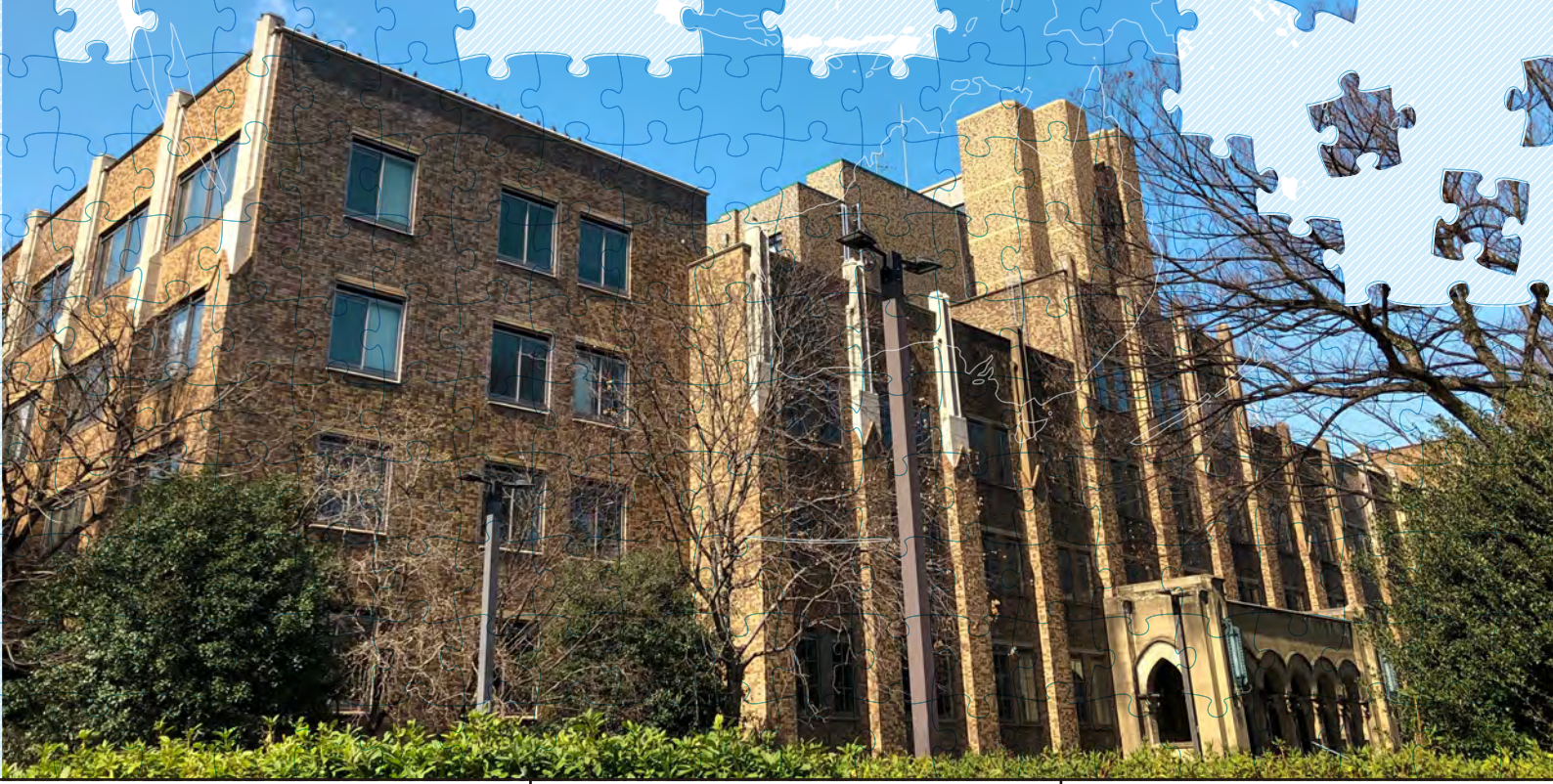
CSRDA
Center for Social Research and Data Archives, Institute of Social Science, The University of Tokyo
SUSTAINABLE DEVELOPMENT GOALS
CSRDA supports the Sustainable Development Goals

CSRDA Discussion Paper

Wage Structure of Japanese Long-term Care Workers: Difference between For-profits and Nonprofits



No. 122

Date May.2025

SDGs 3 GOOD HEALTH AND WELL-BEING, 4 QUALITY EDUCATION, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Name Yoshimasa Kato

Wage Structure of Japanese Long-term Care Workers: Difference between For-profits and Nonprofits

Yoshimasa Kato*

Abstract

I analyze the wage structure of Japanese long-term care workers. The Japanese long-term care industry includes for-profit companies and nonprofit organizations. The differences in these organizations lead to differences in workers' wage structure. Nonprofit organizations have constraints on profit distribution; their revenue is added to workers' wages as a premium. Therefore, the wage rate per working hour of nonprofit might be higher than that of for-profit companies. However, for-profit companies seek profit; they might accumulate general human capital. Nonprofit organizations create trust with their users; they might accumulate specific human capital. I estimate the Mincer equation and use Kitagawa Oaxaca-Blinder decomposition with individual data on long-term care workers. The empirical results show that the wage rate is higher, and general human capital accumulates more among for-profit workers. Moreover, bonuses increase the monthly wages of nonprofit workers. Thus, the nonprofit premium, which may be an allowance, increases wages. Finally, specific human capital does not accumulate in for-profit companies or nonprofit organizations.

Keywords; Wage rate, Human capital, For-profit, Nonprofit, Kitagawa Oaxaca-Blinder decomposition
JEL codes; J24, J31, L31

* Himeji Dokkyo University, School of Industrial and Management
E-mail: z_kato@gm.himeji-du.ac.jp

1. Introduction

Japan's long-term care for older adults has experienced dynamic changes. First, the Japanese long-term care industry includes many organizational forms. Approximately half of the Japanese long-term care services are formal care services at users' homes or day-care services at nursing care offices. By the 1990s, public and nonprofit organizations mainly provided long-term care services for older adults. However, with the evolving demographic, supplying long-term care services via the previous system became challenging. Therefore, in the 2000s, for-profit companies were allowed to enter long-term care services. This led to market competition in the Japanese long-term care industry. Currently, the Japanese long-term care industry includes a diverse range of economic agents, encompassing private for-profit companies, private nonprofit organizations, and public entities.

Many studies have focused on Japan's long-term care industry. In particular, there have been many studies on the mental health and stress experienced by long-term care workers. Additionally, some studies focused on the wages and turnover rate of care workers. Some studies compare for-profit companies and nonprofit organizations. However, to our knowledge, no study has examined the human capital of Japanese long-term care workers or compared it between for-profit and nonprofit organizations.

This study analyzes the factors that influence the wages of Japanese long-term care workers. First it, I analyzed the differences between general human capital, which is useful in many circumstances, and specific human capital, which is useful in specific circumstances. Second, the study compared between for-profit and nonprofit organizations. These two types of organizations have different objectives, corporate governance styles, delegation, and information distribution. Therefore, each require different knowledge and skills, implying that the factors affecting worker wages differ. To analyze these points, the Kitagawa Oaxaca Blinder decomposition was used.

The key findings are as follows: First, there may be a premium on the wages of nonprofit workers. The wage rate of nonprofit workers is lower than that of for-profit workers. However, bonuses increase nonprofit workers' monthly wages. Instead of directly increasing monthly wages, bonuses act as an allowance to boost wages. Second, for-profit workers are more likely to accumulate general human capital than nonprofit workers. This stems from adaptation to market competition. Third, the accumulation of specific human capital is not statistically confirmed in any type of organization.

The remainder of this article is organized as follows. Section 2 briefly reviews the related literature. Section 3 describes the data and methods used in the study. The results are presented in Section 4. Finally, Section 5 presents the conclusions of this study.

2. Literature review

2. 1. Japanese long-term care service

Half of the Japanese long-term care industry comprises care services at users' homes and day-care services at nursing offices[1]. Therefore, most of older Japanese individuals use both formal care supplied by companies and informal care provided by family members. This stems from the traditional idea that family members should support older individuals. In Japan, it is widely believed that wives, daughters, or spouses of the oldest son should help and support older individuals[2]. Therefore, it is common for older individuals to receive both formal and informal care[3].

However, long-term care services for older individuals in Japan operate independently from normal health care services. Generally, information asymmetry exists in the health service industry because of its high professional skills and knowledge (Arrow, 1963). There are no necessary professional skills or knowledge in geriatric nursing care services compared to other normal health services. Therefore, in the long-term care industry, many workers come from diverse educational backgrounds, including not only graduate university and majors in nursing or social services, but also high school and junior high school graduate (Okubo, 2017; Yamada and Ishii, 2021). This causes variations in the skills and knowledge of workers. Moreover, because of the informal care provided by family members, relationships with family members are important in Japanese long-term care services.

For-profit companies entered the Japanese long-term care industry after 2000 due to Japan's evolving demographic structure. The changing population structure necessitated reforms in Japan's social security system (Campbell and Ikegami, 2007). Therefore, several types of geriatric and long-term care service are required. Hence, nonprofit organizations, public organizations, and commercial companies are necessary. After 2000, for-profit companies began supplying long-term care services in Japan, introducing market competition (Noguchi and Shimizutani, 2009; Shimizutani and Suzuki, 2007;).

Theoretical and empirical analyses of the Japanese long-term care industry began in the 2000s. Suzuki (2002) and Suzuki and Shimizutani (2009) compared the quality of care services in for-profit and nonprofit organizations using data from the Japanese long-term care industry. These studies indicate that for-profit organizations are not as opportunistic as predicted by theoretical analyses. In other words, profit-maximizing companies do not reduce their service quality. Regional differences in quality and productivity have been identified in recent years (Suzuki, 2020).

Many studies have investigated the wages and related factors of workers in the Japanese long-term care industry (Noguchi and Shimizutani, 2009; Zhou, 2009; Yin and Kawata, 2009). In Japan, like other health services, the earnings of long-term care offices are determined by insured medical

[1] See Fu et al, (2017).
[2] See Niimi (2016).
[3] See Fu et al, (2024).

treatments and fees. However, the medical fee for long-term care is relatively low compared to that for other medical and health services, because long-term care does not require high skills and knowledge. Therefore, the wages of Japanese long-term care workers tend to be lower than those of workers in other industries. Some studies have pointed out that increasing medical fees directly affect wages and labor supply (Kondo and Shigeoka, 2013; Kondo, 2019; Ueno and Hamaaki, 2017). Furthermore, other studies have analyzed the effects of market competition and the unemployment rate on wages (Zhou, 2009).

Hence, there are important characteristics in the analysis of the wage structures of Japanese long-term care workers. The first is the difference between for-profit and nonprofit organizations. There are many regular-form organizations in the Japanese long-term care industry. Therefore, many nonprofit organizations seek purposes other than profits. Differences in purpose lead to differences in governance or inner rank in the workplace (Newhouse, 1970; Hansmann, 1980; Aghion and Tirole, 1997). Moreover, differences in governance and inner ranks cause differences in wages, labor supply, and quality of their services (Leete, 2000, 2001; Mocan and Tekin, 2003; Morikawa, 2016; Ben-Ner et al, 2018; Dostie and Mohen, 2020). In particular, residual claims incentivize for-profit organizations to reduce their workers' compensation (Borjas et al, 1983). On the other hand, in nonprofit organizations, it has been noted that the restriction on distributing profit leads to an increase in workers' allowances (Roomkin and Weisbrod, 1999; Glaeser and Shleifer, 1997). Therefore, the difference between for-profit and nonprofit organizations affect the wage structure in terms of the wage rate per hour and the allowance amount.

The second factor is human capital. Many scholars have analyzed the relationship between firms' investment in human capital and labor market friction (Becker, 1964; Acemoglu and Pischke, 1999). It is widely believed that high skills and knowledge are not required in the Japanese long-term care industry. Therefore, it might be argued that general human capital which could be substituted with other industries or in the long-term care industry, tends to be placed highly. Hence, in the Japanese long-term care industry, it might be considered that workers' educational backgrounds and years of experience significantly affect wages.

However, there may be difference between for-profit and nonprofit organizations. If for-profit companies seek to maximize their profits, they tend to recruit many types of workers and invest more in general human capital. In the case of nonprofit organizations, especially hospitals, relationships with specific regions and older adults are important. Therefore, nonprofit organizations tend to invest more in specific human capital. Specific human capital is described as tenure years (Topel, 1963).

3. Hypothesis, Data and Method

3.1 Hypothesis

Based on the above discussions, I propose the following hypotheses.

H1: The wage rate for working hours is higher in nonprofit organizations than for-profit companies.

H2: There is a premium on wages at nonprofit organizations.

H3: To adapt to market competition, for-profit companies tend to accumulate general human capital, such as education and years of experience.

H4: To create a comparative advantage in creating user trust, nonprofit organizations tend to accumulate specific human capital such as years of tenure (hereafter, tenure years).

3.2 Data

This study uses individual data from workers from the "Fact-Finding Survey on Long-term Care Work, 2019." The survey is administered annually by the Care Labor Stability Center under the Ministry of Welfare and Labor. The sample offices were randomly chosen from "WAMNET," a yearbook on long-term care offices. Three sample workers were chosen from each office, the selected workers then answered and provided individual data. Responses were collected via mail. The sample size was 17,630 offices and 52,890 workers, with valid data for 9,102 offices and 22,183 workers.

3. 3 Methods

The following Mincer equation is used for the regression analysis.

$$\begin{aligned} lnWage_i = {} & \beta_1 \ln working\ hours_i + \beta_2 Administrative\ post_i + \beta_3 Middle\ manager_i \\ & + \beta_4 Bonus_i + \beta_5 Experience\ years_i + \beta_6 Experience\ Years_i^2 \\ & + \beta_7 Junior\ high\ school_i + \beta_8 Care\ high\ school_i + \beta_9 Non\ care\ high\ school_i \\ & + \beta_{10} Care\ college_i + \beta_{11} Non\ care\ college_i + \beta_{12} Care\ university_i \\ & + \beta_{13} Non\ care\ university_i + \beta_{14} Tenure\ Years_i + \beta_{15} Tenure\ Years_i^2 \\ & + \gamma Control\ variables_i + u_i \end{aligned}$$

The left-hand side of the equation is the log of the care worker i's monthly wages. This study uses monthly wage data because valid daily wage data are limited.

The main explanatory variables are classified into four categories. The first variable is the log of care

worker i's working hours and the $ln\,working\,hours_i$. If β_1 for nonprofit care workers is higher than that of for-profit care workers, hypothesis H1 is supported.

The second main explanatory variable is support and bonus for care worker i, which are $Administrative\,post_i$, $Middle\,manager_i$ and $Bonus_i$, respectively, $Administrative\,post_i$ and $Middle\,manager_i$ are dummy variables for care worker i's job rank: one is an administrative dummy that equals 1 if care worker i is in an administrative post, and the other is a middle management dummy that equals 1 if care worker i is in a middle management post. $Bonus_i$ is a dummy variable that equals 1 if care worker i's workplace provides a bonus to the worker. However, these data do not describe the value of worker bonuses. This indicates only whether bonuses are provided. If β_2, β_3 and β_4 for nonprofit workers exceed those of for-profit workers, hypothesis H2 is supported.

The third explanatory variable is general human capital, represented by $Junior\,high\,school_i$, $Care\,high\,school_i$, $Non\,care\,high\,school_i$, $Care\,college_i$, $Non\,care\,college_i$, $Care\,university_i$, $Non\,care\,university_i$, $Experience\,years_i$, and $Experience\,Years_i^2$. $Experience\,years_i$ is the number of years of experience of care worker i at the main job. $Experience\,Years_i^2$ is the squared term of $Experience\,years_i$. The education dummy variables are composed of six variables for care worker i's education, representing whether the worker has a care major from high school, college of technology, or university. If β_5, β_6, β_7, β_8, β_9, β_{10}, β_{11}, β_{12} and β_{13} are higher for for-profit workers, hypothesis H3 is supported.

The fourth explanatory variable was specific human capital, described by $Tenure\,Years_i$ and $Tenure\,Years_i^2$. $Tenure\,Years_i$ is the number of years worked by care worker i at their current workplace, and $Tenure\,Years_i^2$ is the square of $Tenure\,Years_i$. If β_{14} and β_{15} are higher for nonprofit workers, hypothesis H4 is supported.

The control variables are described as the $Control\,variables_i$. Care worker i's attributes include age and gender: six dummy variables for job, non-regular work, marriage, working right after graduation; 47 living prefecture dummy variables; and 13 motivation dummy variables for working at the current company/organization. Office attributes included the total number of employees and prefectures of the office. As the reference group comprises 1 to 19 employees, the total number of employees is described by five dummy variables; 20 to 49, 50 to 99, 100 to 299, 300 to 499, and over 500 employees.

This study used the Kitagawa-Oaxaca-Blinder (KOB) decomposition method[4]. The sample comprises both *For-profits* and *Nonprofits*. *For-profits* includes only "Private companies," *Nonprofits* includes "Social Welfare Council," "Social Welfare Corporations," "General Incorporated

[4] This analysis has been developed by Kitagawa (1955), Blinder (1973), Oaxaca (1973), and Oaxaca and Ransom (1994). For an example of an analysis on nonlinear estimation, see Bauer and Sinning (2008).

Associations," "Medical Corporations," "Cooperatives," and "Not-for-Profit Organizations." These corporations and organizations are regarded as "Nonprofits" that do not have profits as their main objective under Japanese law. Table 1 summarizes these sub-samples.

[Table 1 is here.]

The decomposition analyzes the endowments, coefficients, and interactions of the estimation. The Oaxaca command in Stata was then used[5].

4. Results

4. 1. Summary statistics

[Table 2 is here.]

This section analyzes the differences between the variables *For-profits* and *Nonprofits*. A t-test was used to test these differences, and the results are presented in Table 2. The mean of the dependent variable, log of monthly wages, is higher for *Nonprofits* than *For-profits*, and is statistically significant at the 5% level. This is consistent with studies showing that nonprofit workers' wages are higher than those of for-profit workers.

Among the explanatory variables, the means of nonprofit workers' working hours, experience and tenure years, middle managers, and education dummy variables on care major, marriage and new graduation were higher than those for for-profit workers, with a statistically significant difference. Therefore, nonprofit workers tend to work longer than for-profit workers.

Meanwhile, in administrative posts, the number of employees between 1 to 19, and 20 to 49 are statistically significant for for-profit workers. These differences indicate that for-profit companies tend to concentrate more on decision-making rights in administrative posts to enhance profitability. Therefore, human capital accumulation may differ between for-profit and nonprofit organizations.

4.2. Estimation results

[Table 3 is here.]

Column 1 in Table 3 presents the estimation results for all workers. The logs of working hours and

[5] See Jann (2008).

job rank dummy variables are statistically significant at the 1% level. The bonus dummy is also statistically significant at the 5% level. Moreover, the signs of β_1, β_2, β_3, and β_4 are positive. These results indicate that working hours, job rank, and bonuses increase worker wages. Moreover, year of experience and their square terms were statistically significant. The sign of the coefficient of experience years (β_5) is positive, and sign of the coefficient its square (β_6) is negative. However, education dummy variables had statistically significant effects. The sign of all of these variables (β_7, β_8, β_9, β_{10}, β_{11}, β_{12}, and β_{13}) are negative. These dummy variables ranges from junior high school to non-care university. Therefore, the reference group was those with master's degree from a graduate university. The lowest value of the coefficient is junior high school (β_7) is -0.1526, the highest is care university (β_{12}) is -0.1026. Therefore, the care skills acquired at care universities increase workers' wages. These results indicate that general human capital increases workers' wages through education, job rank, job training. However, tenure years (coefficient is β_{14}) does not have a statistically significant effect, while its square term (β_{15}) is significant at the 10% level. Therefore, specific human capital accumulates but its effects on wages are minimal.

Among the control variables, the female dummy variable has a negative statistically significant effect. Therefore, female workers' wages are lower than male workers, similar to the dynamics in other Japanese industries. Next, age and the square of age have statistically significant effects on diminishing wage returns; the number of employees has a statistically significant positive effect. Therefore, economies of scale of profit organizations increase care workers' wages. Moreover, the signs of the coefficients of the job occupation dummy variables are negative if the reference group comprises therapists. Visit care workers had the lowest coefficients.

Next, the hypothesis testing results are reported. Columns 2 and 3 of Table 3 present the results for the sub-samples of *For-profits* and *Nonprofits*, respectively. β_1 which indicates the wage rate of working hours of for-profit workers is 0.2872, which is higher than that of nonprofit workers at 0.2232[6], and the difference between these has statistical significance at 1%. Thus, H1 is not supported. This may be because Japanese for-profit companies in the care industry pay workers based on productivity. Similarly, the results for four of the five groups of employees were significant only for for-profit workers. Therefore, even if there are residual claims at profitable companies, they pay a return to the Japanese care workers through wages.

Next, the coefficients of the administrative post (β_2) and middle manager dummies (β_3) for for-profit firms are 0.1463 and 0.0801, respectively. These values are lower than those for nonprofit workers (0.1960 and 0.0978, respectively). Moreover, the coefficient of the bonus dummy (β_4) of nonprofit workers is 0.0938 higher than that of for-profit companies workers (0.0363). This indicates that a bonus system increases nonprofit workers' wages. Therefore, Japanese nonprofit organizations pay

[6] The results of Ruhm and Borkoski (2003) are similar, showing very little difference between nonprofits and for-profits.

substantial allowances to their workers. Therefore, H2 is supported by both workers' allowance and job rank premiums.

I consider H3. Coefficients of experience years (β_5) is statistically significant, and its square (β_6) is not significant for for-profit workers. However, neither of these coefficients is not statistically significant for nonprofit workers. Moreover, all of the coefficients of education (β_7, β_8, β_9, β_{10}, β_{11}, β_{12}, and β_{13}) are significant for for-profit workers but not for nonprofit workers. Therefore, the return on general human capital accumulates for for-profit workers but not nonprofit workers. Thus, H3 is supported. As noted in H1, the return on profits from wages increases with an increase in number of employees. Therefore, for-profit companies in the Japanese care industry repay their workers.

Next, coefficients of tenure years (β_{14}) and their squares (β_{15}) are not statistically significant in Column2. However, β_{15} is significant in Column 3, nonprofit. Therefore, H4 is supported. This indicates that specific human capital tend to accumulate in nonprofit care offices.

[Table 4 is here.]

Table 4 presents the results of the KOB decomposition[7]. First, regarding the differences in endowments, the log of working hours, bonuses, years of experience and their square, non-major care university, administrative post, middle manager, and number of employees were statistically significant. The signs of the logs of working hours, years of experience, and middle managers were positive. The sign for the administrative post was negative. These results indicate that for-profit companies have more administrative posts than nonprofits; nonprofits companies tend to have more middle managers. This may be because for-profit companies maximize their profits, and thus tend to concentrate more on decision rights. Furthermore, the number of employees in offices under 49 years of age is larger in for-profit than in nonprofit organizations. The coefficient of the bonus is 0.0640, which is statistically significant. This finding also indicates that bonuses affect workers' wages through allowances. However, these interactions are not statistically significant. Therefore, endowments and coefficients almost entirely explain the difference between for-profit and nonprofit organizations.

5. Conclusion

Using the Kitagawa-Blinder-Oaxaca decomposition, I analyzed the difference in the wage rate and human capital accumulation between the organizational forms. The key findings are as follows: First,

[7] I also analyzed the two-part decomposition using the "Differential" command. Regarding the two-part decomposition, the explained part is similar to the endowments, and the unexplained part is similar to the coefficients. In the differential analysis, number of employees, education, experience, and tenure years are statistically significant.

for-profit workers' wage rate is higher, whereas the bonus system increases nonprofit workers' wages. Therefore, nonprofit premiums for workers are not wage rates but allowances for workers in the Japanese long-term care industry. Second, the accumulation of human capital differs between for-profit and nonprofit organizations. This stems from differences in their objectives. For-profits tend to concentrate more on decision-making rights for administrative posts than nonprofit organizations competing in the market. Therefore, general human capital tends to accumulate more in for-profit companies than in nonprofit organizations, and the Japanese long-term care industry must stimulate market competition.

This study had some limitations. First, workers' working hours were used as an independent variable. However, working hours are not strictly independent variables because many factors determine them. Therefore, future research must overcome the endogeneity in working hours. Second, this study did not analyze public organizations because of its small sample size. However, workers in public organizations have important characteristics, particularly altruistic motivations[8]. A contrast between the private and public is necessary to consider such factors. Third, there may be selection bias as, the surveyed individuals chose their sector whether for-profit or nonprofit[9]. The treatment of selection bias is crucial for future studies.

References

Acemoglu, D. and Pischke, J. (1999) "The Structure of Wages and Investment in General Training", *Journal of Political Economy*, Vol. 107, No. 3, pp.

Aghion, P. and Tirole, J. (1997) "Formal and Real Authority in Organization", *Journal of Political Economy*, Vol. 105, No. 1, pp. 1 - 29.

Altonji, J. G. and Shakotko, R. A. (1987) "Do Wages Rise with Job Seniority?", *Review of Economic Studies*, Vol. 54, No. 3, pp 437 - 459.

Arrow, K. J. (1963) "Uncertainty and the Welfare Economics of Medical Care", *American Economic Review*, Vol. 53, No. 5, pp. 941 - 973.

Bartel, A. P. and Borjas, G. J. (1977) "Specific Training and Its Effects on the Human Capital Investment Profile", *Southern Economic Journal*, Vol. 44, No. 2, pp. 333 - 341.

Bauer, T. K., and Sinning, M. (2008) "An extension of the Blinder-Oaxaca decomposition to Nonlinear Models", *Advances in Statistical Analysis*, Vol. 92, pp. 197 - 206.

[8] These altruistic motivations are important not only for public organizations but also private nonprofits organizations (Leete, 2000, 2001). This theme is also an important study theme.

[9] Additionally, I estimate wages using Heckman's two-step estimation. The results are similar to those of this paper. Moreover, results indicate that selection bias does not exist at for-profit companies but at nonprofit organizations. However, this estimation is valid for selection bias in wages but not for workers' choice, whether for-profit or nonprofits.

Becker, G. S. (1964) *Human Capital*, Chicago: The University of Chicago Press.

Ben-Ner, A., Hamann, D. J. and Ren, T. (2018) "Does Ownership Matter in the Selection of Service Providers? Evidence from Nursing Home Consumer Surveys", *Nonprofit and Voluntary Sector Quarterly,* Vol. 47, No. 6, pp. 1271 - 1295.

Blinder, A. S. (1973) "Wage Discrimination: Reduced Form and Structural Estimates", *Journal of Human Resources*, Vol. 8, pp. 436 - 455.

Borjas, G. J., Frech III, H. E. and Ginsburg, P. B. (1983) "Property Rights and Wages: The Case of Nursing Homes", *Journal of Human Resources*, Vol. 18, No. 2, pp. 231 - 246.

Campbell, J. C. and Ikegami, N. (2003) "Japan's Radical Reform of Long-term Care", *Social Policy and Administrations*, Vol. 37, No. 1, pp. 21 - 34.

Dostie, B. and Mohsen, J. (2020) "Not for the Profit, But for the Training? Gender Differences in Training in the For-Profit and Non-Profit Sectors", *British Journal of Industrial Relations*, Vol. 58, No. 3, pp. 644 - 689.

Erus, B. and Weisbrod, B. (2003) "Objective Functions and Compensation Structures in Nonprofit and For-Profit Organizations: Evidence from the "Mixed" Hospital Industry", *The Governance of Not-for-Profit Firms*, pp. 117 - 142.

Felli, L. and Harris, C. (1996) "Learning, Wage Dynamics, and Firm-Specific Human Capital", *Journal of Political Economy*, Vol. 104, No. 4, pp. 838 - 868.

Fu, R., Noguchi, H., Kawamura, A., Takahashi, H. and Tamiya, N. (2017) "Spillover Effect of Japanese Long-term Care Insurance as an Employment Promotion Policy for Family Caregivers", *Journal of Health Economics,* Vol. 56, pp. 103 - 112.

Fu, R., Le, D. D. and Ibuka, Y. (2024) "The Impact of Reducing Formal Care Benefits on Caregivers' Well-being: Evidence from Japan", *Review of Economics of the Household*, https://doi.org/10.1007/s11150-024-09699-5.

Glaeser, E. L. and Schleifer, A. (2001) "Not-for-Profit Entrepreneurs", *Journal of Public Economics*, Vol. 81, No. 1, pp. 99 - 115.

Hansmann, H. (1980) "The Role of the Nonprofit Enterprise", *Yale Law Journal*, Vol. 89, pp. 835 - 901.

Hashimoto, M. and Raisian, J. (1985) "Employment Tenure and Earnings Profiles in Japan and the United States", *American Economic Review*, Vol. 75, No. 4, pp. 721 - 735.

Jann, B. (2008) "The Blinder-Oaxaca Decomposition for Linear Regression Models", *Stata Journal*, Vol. 8, No. 4, pp. 453 - 479.

Kessler, A. S. and Lufesmann, C. (2006) "The Theory of Human Capital Revisited: On the Interaction of General and Specific Investment", *Economic Journal*, Vol. 116, No. 514, pp. 903 - 923.

Kitagawa, E. M. (1955) "Components of a Difference Between Two Rates", *Journal of the American Statistical Association*, Vol. 50, No. 272, pp. 1168 - 1194.

Kondo, A. and Shigeoka, H. (2013) “Effects of Universal Health Insurance on Health Care Utilization, and Supply-Side Responses: Evidence from Japan”, *Journal of Public Economics*, Vol. 99, pp. 1 - 23.

Kondo, A. (2019) “Impact of Increased Long-term Care Insurance Payments on Employment and Wages in Formal Long-term Care”, *Journal of the Japanese and International Economies*, Vol. 53, 101034.

Kugler, P. (2021) “The Role of Wage Beliefs in the Decision to Become a Nurse”, *Health Economics*, https://doi.org/10.1002/hec.4442.

Lazear, E. P. (2009) “Firm-specific Human Capital: A Skill-weights Approach”, *Journal of Political Economy*, Vol. 117, No. 5, pp. 914 - 940.

Leete, L. (2000) “Wage Equity and Employee Motivation in Nonprofit and For-Profit Organizations”, *Journal of Economic Behavior and Organization*, Vol. 43, pp. 423 - 446.

Leete, L. (2001) “Whither the Nonprofit Wage Differential? Estimates from the 1990Census”, *Journal of Labor Economics*, Vol. 19, No. 1, pp. 136 - 170.

Mocan, H. N. and Tekin, E. (2003) “Nonprofit Sector and Part-Time Work: An Analysis of Employer-Employee Matched Data of Child Care Workers”, *Review of Economics and Statistics*, Vol. 85, No. 1, pp. 38 - 50.

Morikawa, M. (2016) “A Comparison of the Wage Structure Between the Public and Private Sectors in Japan”, *Journal of the Japanese and International Economies*, Vol. 39, pp.73 - 90.

Newhouse, J. P. (1970) “Toward a Theory of Nonprofit Institutions: An Economic Model of Hospital”, *American Economic Review*, Vol. 60, No. 1, pp. 64 - 74.

Niimi, Y. (2016) “The “Costs” of Informal Care: An Analysis of the Impact of Elderly Care on Caregivers’ Subjective Well-being in Japan” *Review of Economics of the Household*, Vol. 14, No. 4, pp. 779 - 810.

Noguchi, H. and Shimizutani, S. (2007) “Nonprofit/For-profit Status and Earning Differentials in the Japanese At-home Elderly Care Industry: Evidence from Micro-level Data on Home Helpers and Staff Nurses”, *Journal of the Japanese and International Economies*, Vol. 21, No. 1, pp. 106 - 120.

Noguchi, H. and Shimizutani, S. (2009) “Supplier Density and At-home Care Use in Japan: Evidence from a Micro-level Survey on Long-term Care Receivers”, *Japan and the World Economy*, Vol. 21, No. 4, pp. 365 - 372.

Oaxaca, R. L. (1973) “Male-female Wage Differentials in Urban Labor Markets”, *International Economic Review*, Vol. 14, pp. 693 - 709.

Oaxaca, R. L. and Ransom, M. R. (1994) “On Discrimination and the Decomposition of Wage Differentials” *Journal of Econometrics*, Vol. 61, pp. 5 - 21.

Okubo, S. (2017) “Variation in Wage Inequality across Care Workers’ Earning Distribution -Evidence

from Quantile Regression-", *Soshioroji*, Vol. 61, No. 3, pp. 3 - 22.

Pendergast, C. (1992) "Career Development and Specific Human Capital Collection", *Journal of the Japanese and International Economies*, Vol. 6, pp. 207 - 227.

Preston, A. E. (1988) "The Effects of Property Rights on Labor Costs of Nonprofit Firms: An Application to the Day Care Industry", *Journal of Industrial Economics*, Vol.36, No. 3, pp. 337 - 350.

Rijn, J. V., Zeng, S. and Hueth, B. (2023) "Do Credit Unions Have Distinct Objectives? Evidence from Executive Compensation Structures", *Annals of Public and Cooperative Economics*, Vol. 94, No. 1, pp. 5 - 38.

Roomkin, M. J. and Weisbrod, B. (1999) "Managerial Compensation and Incentives in For-Profit and Nonprofit Hospitals", *Journal of Law, Economics, and Organization*, Vol. 15, No. 3, pp. 750 - 781.

Ruhm, C. J. and Borkoski, C. (2003) "Compensation in the Nonprofit Sector", *Journal of Human Resources*, Vol. 38, No. 4, pp. 992 - 1021.

Shimizutani, S. and Suzuki, W. (2007) "Quality and Efficiency of Home Help Elderly Care in Japan: Evidence from Micro-level Data", *Journal of the Japanese and International Economies*, Vol. 21, No. 2, pp. 287 - 301.

Suzuki, W. (2002) "Are Nonprofit At-home Long-term Care Providers Advantageous?", *Quarterly of Social Security Research*, Vol. 38, No. 1, pp. 74 - 88.

Suzuki, W. (2020) "Labor Productivity in Japanese Home Help Industry: Evidence from Establishment-Level Data", *Japanese Journal of Health Economics and Policy*, Vol. 32, No. 1, pp. 21 - 43.

Topel, R. (1991 "Specific Capital, Mobility, and Wages: Wages Rise with Job Seniority," *Journal of Political Economy*, Vol. 99, No. 1, pp. 145 - 176.

Troske, K. R. (1999) "Evidence on the Employer Size-Wage Premium from Worker-Establishment Matched Data", *Review of Economics and Statistics*, Vol. 81, No. 1, pp. 15 - 26.

Ueno, A. and Hamaaki, J. (2017) "The Impact of the 2009 Long-Term Care Compensation Reform on Caregiver Wages, Working Hours, and Job Separation Rate", *Japanese Journal of Health Economics & Policy*, Vol. 29, No. 1, pp. 33 - 57.

Yamada, A. and Ishii, K. (2021) "Aging and Wages of Long-term Care Workers: A Case Study of Japan, 2002 - 2017", *Economic Analysis*, Vol. 202, pp. 71 - 100.

Yin, T. and Kawata, K. (2023) "Wage Differentials between For-Profit and Non-Profit Firms: A Case Study of the Nursing Care Industry in Japan", *Economic Review*, Vol. 74, No. 1, er.ar.027223 DOI: 10.60328/keizaikenkyu.er.ar.027223.

Zhou, Y. (2009) "Shortage of Long-Term Care Workers in Japan", *Academic Studies Journal of Health Care and Society*, Vol. 19, No. 2, pp. 151 - 168.

Acknowledgements

The author is indebted and grateful to the Tokyo University Social Science Institute Data Archive Center, through which the data from the "Fact-Finding Survey on Long-term Care Work, 2019" were obtained. The year of the data is 2019, and the data were researched and collected by "The Care Labor Stabilization Center". However, any remaining errors are the author's responsibility.

Statements and Declarations;

1. Compliance with ethical standards; This analysis does not identify individuals. Moreover, this analysis does not assess any community or social. Therefore, the author has no problem on compliance and ethical standards.

2. Conflict of interest statement; The author has no competing interests associated with this manuscript.

3. Fundings; The author is not supported by any fundings.

Table 1. Forms of organizations

Definition of this paper	Definition at research	N
1. For-profit, 10930 workers	*Company Limited and others*	10930
2. Nonprofit, 8998 workers	*Social welfare council.*	1436
	Social welfare associations.	4062
	Medical foundations.	1356
	NPO organizations.	945
	Foundations	983
	Cooperatives	216

Note: "Public organizations", "Others" and "I don't know" are excepted.

Table 2. Difference of variables between For-Profit and Nonprofit

Variables	Whole		For-profit (1)		Nonprofit (2)		Difference (1) - (2)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.		
Monthly wage	192071.7	80728.09	191893	84224	194821	75720	-2928	**
Working hours by week	34.5906	10.58	34.3304	34.1225	35.2529	35.0384	-0.9225	***
Bonus	0.6376	0.48	0.5219	0.50	0.7830	0.41	-0.2611	***
Experience years	10.4675	7.56	9.6010	7.2592	11.5190	7.6567	-1.918	***
Tenure years	6.8707	5.72	5.4317	5.349	8.7931	6.5612	-3.3614	***
Job rank dummy variables								
Administrative post	0.153	0.36	0.1929	0.19	0.1166	0.11	0.0763	***
Middle manager	0.2015	0.4	0.1717	0.16	0.2458	0.24	-0.0741	***
Normal employee	0.6377	0.48	0.6291	0.62	0.6299	0.62	-0.0008	
Education dummy variables								
Junior high school	0.0386	0.19	0.0449	0.21	0.0279	0.16	0.017	***
Care high school	0.029	0.17	0.0265	0.02	0.0301	0.03	-0.0036	
Non care high school	0.5263	0.5	0.5271	0.50	0.5178	0.50	0.0093	
Care college	0.0828	0.28	0.0713	0.26	0.0987	0.30	-0.0274	***
Non-care college	0.1679	0.37	0.1679	0.37	0.1707	0.38	-0.0028	
Care university	0.0535	0.23	0.0522	0.22	0.0592	0.24	-0.007	**
Non-care university	0.1019	0.3	0.1101	0.31	0.0954	0.29	0.0147	**

Non regular	0.3197	0.47	0.3119	0.30	0.3158	0.31	-0.0039	
Female	0.7762	0.42	0.7769	0.77	0.7720	0.42	0.0049	
Age	46.8587	11.83	47.3777	12.01	49.5981	11.38	-2.2204	***
Marriage	0.6301	0.48	0.6241	0.48	0.6438	0.48	-0.0197	*
New graduate	0.1456	0.35	0.1074	0.31	0.1876	0.39	-0.0802	***
Number of employees								
Under 19	0.1405	0.35	0.2183	0.41	0.0612	0.24	0.1571	***
20 to 49	0.2178	0.41	0.3080	0.46	0.1296	0.34	0.1784	***
50 to 99	0.2045	0.4	0.1902	0.39	0.2190	0.41	-0.0288	***
100 to 299	0.2473	0.43	0.1278	0.33	0.3660	0.48	-0.2382	***
300 to 499	0.0714	0.26	0.0355	0.18	0.1060	0.31	-0.0705	***
Over 500	0.1185	0.32	0.1202	0.33	0.1182	0.32	0.002	

Note: ***, ** and * indicate significance at the 1%, 5%, and 10% respectively.

Table3 Results of estimation

Dependent variable	Log of wage						
Sub-samples	Whole sample		*For-Profit*		*Nonprofit*		*Difference*
Log of working hours	0.2638	***	0.2872	***	0.2232	***	**
	[18.34]		[26.62]		[19.07]		
Administrative post	0.1683	***	0.1463	***	0.196	***	**
	[14.66]		[9.73]		[9.95]		
Middle manager	0.0861	***	0.0801	***	0.0978	***	
	[8.69]		[5.54]		[6.67]		
Bonus	0.0579	***	0.0363	***	0.0938	***	**
	[5.40]		[2.96]		[5.30]		
Experience years	0.0043	**	0.0058	***	0.0022		
	[2.99]		[3.04]		[1.03]		
Square of experience years	0.0000		-0.0001		0.0000		
	[-0.89]		[-1.44]		[0.19]		
Junior high school	-0.1419	***	-0.1842	***	-0.0843		
	[-2.91]		[-2.75]		[-1.07]		
Care high school	-0.1158	**	-0.0923	*	-0.1252		
	[-2.23]		[-1.33]		[-1.61]		
Non-care high school	-0.1078	***	-0.1257	**	-0.0727		
	[-2.39]		[-2.00]		[-1.02]		
Care college	-0.1122	***	-0.1753	***	-0.0392		
	[-2.40]		[-2.68]		[-0.54]		
Non-care college	-0.1028	**	-0.1281	**	-0.0609		
	[-2.26]		[-2.01]		[-0.85]		
Care university	-0.0961	**	-0.11	*	-0.0663		
	[-2.01]		[-1.66]		[-0.89]		
Non-care university	-0.0935	**	-0.1035		-0.0673		
	[-2.03]		[-1.61]		[-0.92]		
Tenure years	0.0012		0.0033		0.0000		
	[0.66]		[01.00]		[0.02]		
Square of tenure years	0.0002	**	0.0000		0.0002	**	
	[2.26]		[0.18]		[1.98]		
Non regular	-0.3693	***	-0.4162	***	-0.312	***	***

	[-32.23]		[-29.36]		[-20.17]	
20 49	0.0496	***	0.0657	***	0.0186	**
	[4.63]		[4.71]		[0.89]	
50 99	0.0373	**	0.0604	***	0.008	**
	[3.22]		[3.59]		[0.47]	
100 299	0.0595	***	0.0736	***	0.0449	***
	[5.74]		[3.67]		[3.10]	
300 499	0.0571	**	0.0927	***	0.032	
	[2.89]		[2.59]		[1.44]	
Over 500	0.0704	***	0.1082	***	0.0312	**
	[4.16]		[5.20]		[1.45]	
Married	-0.0474	***	-0.0452	***	-0.0466	***
	[-5.94]		[-4.25]		[-3.86]	
New graduate dummy	0.0018		0.0031		0.0093	
	[0.14]		[0.18]		[0.57]	
Age	0.0266	***	0.0254	***	0.0295	***
	[9.54]		[8.09]		[7.61]	
Square of age	-0.0003	***	-0.0003	***	-0.0003	***
	[-9.49]		[-8.34]		[-7.27]	
Female dummy	-0.1127	***	-0.1058	***	-0.1223	***
	[-10.95]		[-7.92]		[-8.34]	
For profit	-0.0101					
	[-0.12]					
Constant	10.7935	***	10.6974	***	10.8558	***
	[102.35]		[88.61]		[76.86]	
Motivation dummy (13)	Yes		Yes		Yes	
Regional dummy (48)	Yes		Yes		Yes	
Occupation dummy (6)	Yes		Yes		Yes	
N	14242		7646		6596	
R2	0.4061		0.457		0.3557	

Note 1: Numbers in parentheses are standard deviation with robust standard errors.

Note 2: ***, ** and * indicate significance at the 1%, 5%, and 10% respectively.

Note 3: Motivation dummy is answer why workers are working in current organizations or companies.

Note 4: Regional dummy is based on prefecture where worker is living.

Note 5: Occupation dummy is based on visit care workers, service provider, nurses, life adviser, care manager and therapist.

Note 6: Column named "*Difference*" means statistical significance of coefficients between Column *For-profit* and *Nonprofit*.

Table 4. Results of Kitagawa-Oaxaca-Blinder Decomposition

	Endowments		Coefficient		Interaction	
Log of working hours by week	0.0063	**	-0.1153		-0.0008	
	[0.00]		[0.15]		[0.00]	
Bonus	-0.0006	*	0.064	***	0.0279	***
	[0.00]		[0.02]		[0.01]	
Experience years	0.0234	***	-0.0697	*	-0.0155	*
	[0.01]		[0.04]		[0.01]	
Square of experience years	-0.0108	***	0.0281	*	0.0103	*
	[0.00]		[0.02]		[0.01]	
Tenure years	0.0054		-0.0082		-0.0052	
	[0.02]		[0.03]		[0.02]	
Square of tenure years	0.0133		0.0016		0.0024	
	[0.02]		[0.02]		[0.02]	
Care high school	0.0000		-0.0012		-0.0001	
	[0.00]		[0.00]		[0.00]	
Non care high school	-0.0001		0.0173		-0.0003	
	[0.00]		[0.04]		[0.00]	
Care college	-0.0017		0.0093		0.0002	
	[0.00]		[0.01]		[0.00]	
Non-care college	0.0000		0.0084		0.0001	

	[0.00]		[0.01]		[0.00]
Care university	0.0007		0.0005		0.0002
	[0.00]		[0.00]		[0.00]
Non-care university	-0.0021	*	0.0019		-0.0004
	[0.00]		[0.01]		[0.00]
Administrative post	-0.0150	***	-0.0023		0.0009
	[0.00]		[0.01]		[0.00]
Middle manager	0.0076	***	-0.0038		-0.0016
	[0.00]		[0.00]		[0.00]
Female	-0.0006		-0.0203		-0.0002
	[0.00]		[0.01]		[0.00]
Age	-0.0050		0.5069		-0.0027
	[0.01]		[0.38]		[0.00]
Square of age	0.0082		-0.2235		0.0037
	[0.01]		[0.20]		[0.00]
Marriage	-0.0014	*	-0.0155		-0.0011
	[0.00]		[0.01]		[0.00]
Non regular	0.0015		0.032	***	-0.0004
	[0.00]		[0.01]		[0.00]
New graduate	0.0016		-0.0004		-0.0003
	[0.00]		[0.00]		[0.00]
Number of employees					

20 for 49	-0.0128	***	-0.0087		0.0051
	[0.00]		[0.01]		[0.01]
50 for 99	0.0014	*	-0.0042		-0.0004
	[0.00]		[0.01]		[0.00]
100 for 299	0.0252	***	-0.005		-0.0094
	[0.01]		[0.01]		[0.01]
300 for 499	0.0089	***	-0.0029		-0.0052
	[0.00]		[0.00]		[0.00]
Over 500	-0.0008		-0.0116	*	0.0005
	[0.00]		[0.01]		[0.00]

Note 1: Numbers in parentheses are standard deviation with robust standard errors.

Note 2: ***, ** and * indicate significance at the 1%, 5%, and 10% respectively.

Note 3: Control variables are equivalent to Table 3.