



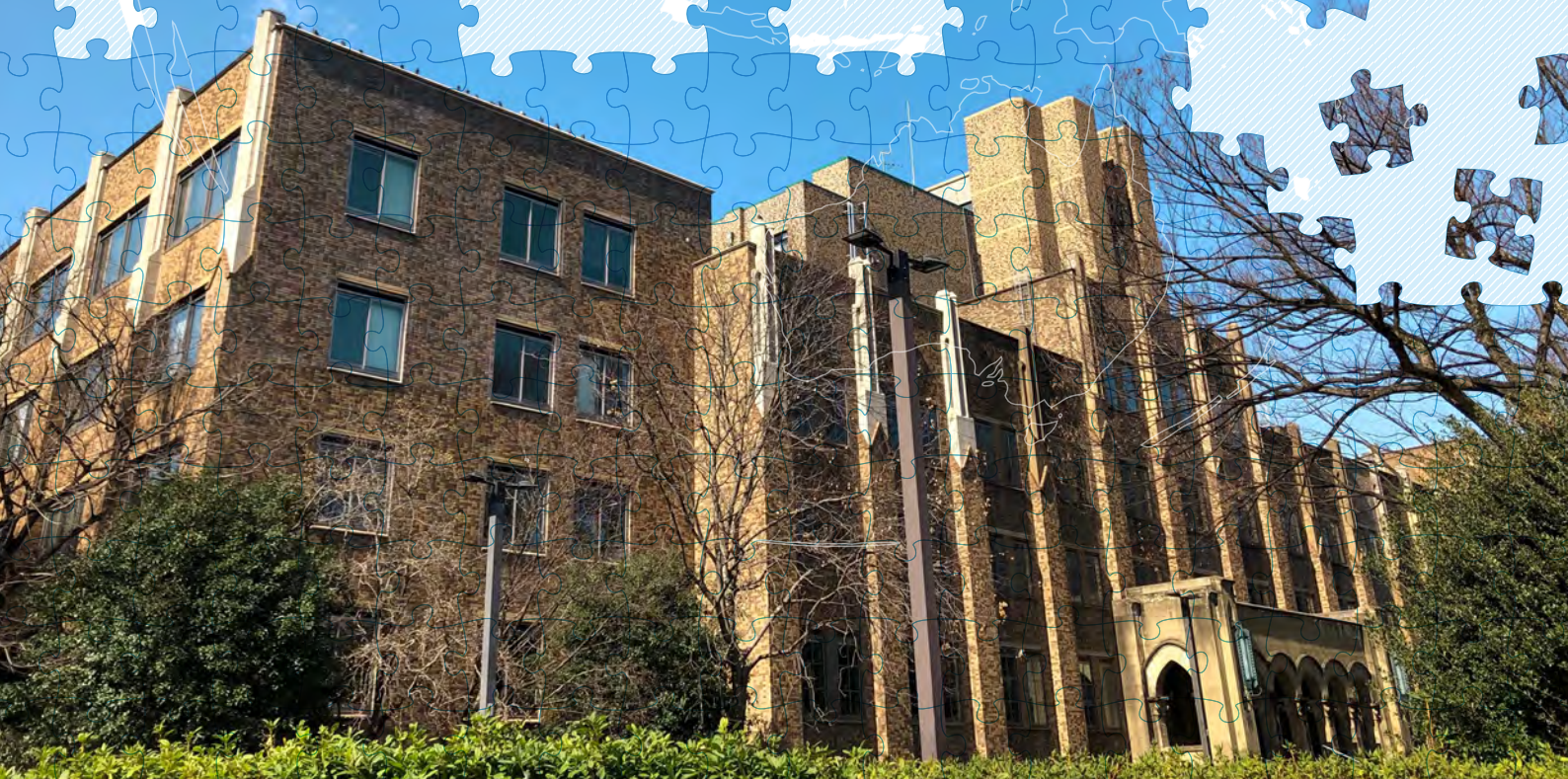
Center for Social Research and Data Archives,
Institute of Social Science, The University of Tokyo


CSRDA supports the Sustainable Development Goals

SUSTAINABLE
DEVELOPMENT
GOALS

CSRDA Discussion Paper

Is Teacher Recruitment Too Late? Timeline of Job Search Activities and Choice of Teaching Career in Japan



No. 69	Date Dec. 2023	SDGs 
Name Mugiho MAEDA		

Is Teacher Recruitment Too Late?

Timeline of Job Search Activities and Choice of Teaching Career in Japan

Mugiho MAEDA (Kokugakuin University)

mugiho@kokugakuin.ac.jp

Abstract

Although recent studies have conducted research on the effects of the timeline of teacher hiring practices on obtaining high-quality teacher candidates, little is known about how the timeline of job search activities for private companies affects potential teacher candidates. Therefore, in this paper, I used a nationwide survey of university and college students in Japan to examine how the timeline of job search activities affects new graduates' decisions about whether to become teachers.

The results of the analysis are as follows. First, receiving the first early unofficial job offer from companies before July, when the first-stage screening examination for teacher recruitment begins, led fourth-year undergraduate students to decide not to choose teaching as a career. This result suggested that delayed teacher recruitment compared to that of private sector companies could lead to educational boards losing potential teacher candidates. Second, the undergraduate students who emphasized working conditions and the environment in their career choice did not choose teaching as a career. In conclusion, this study argues that it is necessary to try to solve the teacher shortage by not only addressing the timeline of teacher recruitment but also teachers' working environment.

Keywords

Teacher hiring, Teacher recruitment, Timing, Teaching career choice, Job search activities

Introduction

Previous research on teacher hiring has paid much attention to how to recruit and hire new teachers with high quality, which is known to be one of the key factors for students' educational achievement. Recently, it has been widely recognized that the timing and timelines of teacher hiring practices conducted by school districts and principals have some effects on the quality of teacher candidates, as measured by teacher qualifications, scores of a screening system, teacher retention, or student achievement test scores. These studies have

examined whether the teacher quality gap arose due to the differences between early and late teacher hiring and suggested that late hiring led school districts and principals to obtain low quality teacher candidates.

While these studies have investigated the difference of teacher hiring timelines among school districts and principals has some effects on new teacher candidates' decisions about where to work, little is known about how the timelines of job search activities for private sector companies affect potential teacher candidates.

In countries where the employment opportunities in private sector companies are alternative career options for potential teacher candidates, as seen in Japan, it is necessary to consider such options in light of a teaching career choice. As undergraduate students in Japan can obtain teaching certificates if they take teacher training courses while completing their own majors, potential teacher candidates with teaching certificates decide whether to become teachers or work in private sector companies. Thus, the purpose of this paper is to examine how the timelines of job search activities affect new graduates' decisions about whether to work as teachers using a nationwide survey of university and college students in Japan.

This study contributes to the understanding of how candidates experience the timing and timelines of teacher recruitment in a broader context. The analysis is also significant from a policy perspective, as it reveals why potential teacher candidates with teaching certificates have been led to choose other jobs in the context of teacher shortages in Japan. In the next section, we examine previous research on the timing of teacher hiring practices and the choice of a teaching career.

Literature

Research on the timing of teacher hiring practice

The timing and timeline of teacher hiring practices have received much attention in studies, which were mainly conducted in the U.S., because they are thought to have some influence on the quality of teacher candidates. For example, Levin and Quinn (2003) analyzed data from four urban districts and found that districts did not make job offers until mid to late summer. This caused 31% to nearly 60% of applicants to withdraw from the hiring process, often to accept jobs in suburban districts that made offers earlier. They insisted that candidates who withdrew from the hiring process in hard-to-staff urban districts because of hiring delays had higher qualifications (as measured by GPAs, a degree in the teaching field, and completed education coursework). Thus, late hiring resulted in information-poor hiring that could not provide a good match between schools and new teachers (Liu and Johnson 2006). Liu and Johnson (2006) conducted a survey of first- and second-year teachers in four states, including California, Florida, Massachusetts, and Michigan. They found that teacher

hiring practices were characterized as "late, rushed, and information-poor," with many new teachers experiencing late hiring after the school year had already begun.

It is suggested that the difference between early and late teacher hiring may widen the gap in teacher quality and student achievement between disadvantaged and advantaged districts. While previous research has found that late teacher hiring tends to occur in disadvantaged districts, such as urban and low SES districts (Levin and Quinn 2003, Engel 2009; 2012), research findings on whether the timing of teacher hiring affects candidate quality have been mixed. Using data from the 1999-2000 School and Staffing Survey (SASS), Engel (2009; 2012) analyzed the relationship between the timing of teacher hiring and teacher qualifications, measured by the selectivity of teachers' undergraduate institutions (Barron's ratings), certifications, or master's degrees, and she found no relationship between timing and teacher qualifications. In recent years, researchers have examined not only the timing of teacher hiring but also that of vacancies posted by districts (Lee 2022). For instance, using data from a screening system for school districts (TeacherMatch), Lee (2022) analyzed the relationship between the timing and duration of vacancies and the quality of teacher candidates, as measured by Educators Professional Inventory (EPI) scores. He found that the average quality of candidates declined as the timing of the job posting approached the start of the school year. However, Lee (2022) also pointed out that the differences in applicant quality were small and that highly qualified candidates remained in the applicant pools of late-hiring districts. He suggested that there were unobservable differences between early-hired applicants and remaining candidates with high-EPI ratings.

On the other hand, Papay and Kraft (2016) revealed the negative effect of late hiring on students' educational attainment. They found that late hiring (hiring teachers after the start of the school year) reduced students' achievement by 0.042 SD (standard deviation) in mathematics and 0.026 SD in reading. They also pointed out that the negative effects of late hiring on student achievement and teacher turnover were concentrated in disadvantaged schools serving large proportions of low-income and low-achieving students, which exacerbated educational inequalities within districts.

The above studies have mainly been conducted in the U.S. based on the premise that each school district or school competes for teacher candidates in local teacher labor markets. This is because the teacher hiring system in the U.S. is highly decentralized, and each district or school decides to hire new teachers on its own timeline.

However, little is known about the effect of teacher hiring timelines on potential teacher candidates under a relatively centralized system, such as in Japan, where the timeline is unified among neighboring prefectures. In such a context, it is necessary to examine the timing and timelines of teacher hiring practices embedded in a broader competitive

environment, particularly between teacher labor markets and other job labor markets. Therefore, this paper examines how the timelines of job search activities for private sector companies affect the decision of new graduates regarding whether they choose to work as teachers in Japan.

Research on the choice of a teaching career

In previous research on the teaching career choice, a large amount of research has been conducted on teaching motivation, specifically divided into three categories: altruistic, intrinsic, and extrinsic motivation (Heinz 2015, Fray and Gore 2018, See et al. 2022). Watt and Richardson (2007; 2012) developed the Factors Influencing Teaching-Choice (FIT-Choice) scale, which serves as the most comprehensive framework, to examine the choice of a teaching career with a combination of motivational factors. In this framework, the teaching career choice is explained by a combination of "socialization influences" as input factors and "task demands", "task rewards", "self-perceptions", "intrinsic value" (referred to in the literature as intrinsic motivations), "personal utility value" (extrinsic motivations), "social utility value" (altruistic motivations), and "fallback career" (Watt and Richardson 2007; 2012). It is widely recognized that there has been a great expansion of research using the FIT-Choice scale in many countries and international comparative studies (Watt et al. 2012, Heinz 2015, Fray and Gore 2018, See et al. 2022).

Recently, however, there have been some criticisms of the FIT-Choice scale study and research using it, especially due to the selection bias. These studies on teaching motivation have often focused only on those who have already made the decision to teach (e.g., preservice teachers or students in teacher education programs) and excluded those who have not (Gorard et al. 2021, Savage et al. 2021, See et al. 2022). See et al. (2022) criticized this tendency of selection bias in research on teaching motivation as downplaying the importance of extrinsic motivations while emphasizing intrinsic or altruistic motivations. While intrinsic or altruistic motivations were important for those who chose to teach, some research showed that extrinsic motivation was important for students who considered teaching once but did not choose to teach later (Stokes 2007, See et al. 2022). Additionally, recent studies analyzed the data of students, including not only those who chose to teach but also those who did not (Gorard et al. 2021, Savage et al. 2021). They found that students' achievement and their family background, which have been little examined in research on teaching motivations as factors, also affect the choice of teaching.

Therefore, this study analyzes the data of undergraduate students, which enables us to avoid the selection bias mentioned above. The undergraduate students in Japan who participated in the survey, whether they chose teaching or not, experienced not only the

timeline of teacher recruitment but also the timeline of job search activities.

In addition, this study also examines the effect of the institutional environment on teaching career choice, which has been little examined in previous studies. While research using the FIT-Choice scale has focused on participants' teaching motivations, it has paid less attention to the influence of factors of the institutional environment, such as the teacher hiring process and job search activities, in which teacher candidates are located on their career choice. Consequently, this paper investigates the effect of job search activities, particularly timing and timelines, on teaching career choice in addition to the altruistic, intrinsic, and extrinsic motivations discussed in previous literature. In the next section, we examine the institutional setting and context of obtaining a teaching certificate, teacher recruitment, and job search activities in Japan.

Institutional setting and context in Japan

Obtaining a teaching certificate

Before considering the teacher recruitment system, we need to understand how to obtain teaching certificates, which is necessary to work as a teacher in Japan. When obtaining teaching certificates, undergraduate students can be roughly divided into three groups. The first group is of students who major in education and take teacher training courses to obtain a teaching certificate. They almost decide to become teachers before they enter colleges or universities. After graduation, most of these students tend to work as teachers in elementary schools.

The second group is of students who take teacher training courses in addition to their own majors at the same time to obtain a teaching certificate by the time they graduate. Students in this group tend to work as teachers in junior high schools or high schools. However, they do not always choose a teaching career after graduation because obtaining a teaching certificate does not necessarily mean choosing a teaching career in Japan. The teacher education system in Japan is called an "open system," in which undergraduate students can obtain teaching certificates as long as they take teacher training courses while completing courses in their own majors (Iwata 2015). Therefore, this system creates an oversupply of teaching certificate holders and makes the certificate necessary to teach in schools the minimum standard.

The third group is of students who do not take teacher training courses. This means that they would not choose teaching as a career until they graduate.

As a result, some students in the first and second groups would apply for teacher recruitment when they are in the fourth grade. Next, we examine teacher recruitment practices and timelines in Japan, which have some connections with the labor market of other

jobs through new graduates' job search activities.

Teacher recruitment practices and timelines in Japan

Teacher recruitment practices in Japan have several differences from those in the U.S., which have been the focus of most previous research. For the sake of simplicity, we will only discuss teacher recruitment for public schools, not private schools.

First, teacher recruitment in Japan is a relatively centralized system compared to that in the U. S. Principals and educational boards of municipalities (similar to the school district level in the U. S.) do not have the authority to hire teachers, while the educational boards of 47 prefectures (similar to the state level in the U.S.) and 20 ordinance-designated cities (large urban cities such as Osaka City and Kyoto City) screen and decide whether to hire teachers and pay 2/3 of their salaries.

Second, the timeline for recruiting teachers in Japan is more standardized and longer than that in the U.S. Since the school year starts on April 1 and ends on March 31, the typical recruitment process usually lasts approximately one year, as shown below (see Table 1, left row, "Teacher recruitment timeline"). A candidate (usually a fourth grade student) applies to a prefecture or ordinance-designated city in April or May. In July, the offices of the prefectural and ordinance-designated city boards of education conduct the first-stage screening examinations, which include several types of written tests. The timing of the screening examinations in each prefecture closely aligns with that of neighboring regions to prevent candidates from applying to neighboring prefectures or cities, as this would result in candidates withdrawing job offers and accepting others. The second-stage screening examinations are held in August and usually consist of interviews and practical tests, often trial lessons or writing lesson plans. The results of the examinations are announced in October, and a candidate receives a job offer. It is characteristic of the recruitment timeline in Japan that there is a six-month waiting period before new teachers are officially hired after they receive a job offer. In March, the offices of the boards of education inform candidates of their initial school placement as newly hired teachers. At the same time, most candidates graduate from colleges or universities. Finally, on April 1 of the new school year, candidates are hired by education boards and officially assigned to individual schools.

Table 1: Timeline of teacher recruitment and new graduates' job search activities

Month	Teacher recruitment timeline	New graduates' job search/recruitment activities	
		The rule of job search/recruitment activities	Companies' actual recruitment activities
3		•Companies start public relation activities	•Companies hold their briefings and seminars for candidates •Companies ask candidates to submit applications for employment
4	•Candidates apply to each prefecture or ordinance-designated city		•Companies have interviews with candidates
5			
6		•Companies start employment screening activities	
7	•The 1st stage screening examinations (written tests)		
8	•The 2nd stage screening examinations (interviews and practical tests etc.)		
9			
10	•The examination results are announced	•Companies start to give a job offer to their candidates	
	•Candidates receive job offers		
11			
12			
1			
2			
3	•Candidates know about their first school to work as new hired teachers •Candidates graduate from colleges or universities		•Candidates graduate from colleges or universities
4	•A new school year starts •Candidates are hired by educational boards		•Companies hire candidates as new employees

•Candidates receive early unofficial job offers from March to June

Third, although teachers often experience routine rotation and transfer between schools within a prefecture- or ordinance-designated city, they have always been hired by the same prefecture- or ordinance-designated city board of education. As a result, most teachers experience recruitment practices only once when they are hired as new teachers, except when they resign and move to other prefectures or ordinance-designated cities.

Recently, the timeline of teacher recruitment has become an education policy issue in Japan. Since the 2010s, the issue of the timeline of teacher recruitment practice being too late compared with the job search/recruitment activities for other jobs (see Table 1, middle and right rows), which has led the educational boards to fail to obtain high-quality teacher candidates, has been discussed. This issue was highlighted by the Central Education Council (CEC), an advisory group to a minister of education, culture, sports, science and technology (CEC 2015). A few years later, the CEC (2022) also pointed out that it was necessary to make the timing of the teacher recruitment examination even earlier than before, given the shortage of teachers and the decline in the number of teacher applicants in recent years.

As shown in Table 1, the schedule of new graduates' job search activities by students or recruiting activities by private companies is earlier than the schedule of teacher recruitment, both in the rules and actual activities. In the rules of job search/recruitment activities proposed by the Japanese government and Japan Business Federation, companies are to begin public relations activities from March 1, conduct employment screening activities starting from June 1, and start making job offers from October 1. However, most companies do not follow these rules in their actual recruitment activities. They usually start to hold informational meetings and seminars in February or March and ask their candidates to submit applications for employment. Thus, it is pointed out that employment screening activities have already started at this time. Then, many companies interview their candidates in April or May. At the same time, they make early unofficial job offers to their candidates from March to June. As a result, most of the students who are engaged in job search activities have already received early unofficial job offers and have finished their activities before July, when the first stage of teacher recruitment screening examinations begin. For this reason, the CEC pointed out that the timeline of teacher recruitment was too late compared to that of private companies.

Thus, while there has been policy discussion about the relationship between the timing of private sector job search activities and students' choices of teaching careers, little research has investigated how the former influences the latter. Therefore, the analysis is also significant from a policy perspective in that it reveals this relationship.

Research question

This study investigates how the institutional environment, such as the timeline of the teacher hiring process and job search activities, affects the teaching career choice. In particular, the analysis examines how the timelines of job search activities affect new graduates' decisions about whether to become teachers in addition to career choice factors, classified into altruistic, intrinsic, and extrinsic motivations. To avoid selection bias (See et al. 2022), the study uses a nationwide survey of university and college students in Japan for analysis, which includes respondents regardless of whether or not they are choosing a teaching career.

To examine the timelines, this study focuses on the timing of receiving an early unofficial job offer as the end point of job search activities for undergraduate students. In other words, the analysis examines whether receiving an early unofficial job offer before the teacher recruitment practice begins causes potential teacher candidates who took the teacher training course to opt out of pursuing teaching as a career.

Methods

Data

This study uses data from the survey on the timing of students' job search activities in 2018 collected by the Director General for Economic Policy Planning, Cabinet Office, and conducted by Hamagin Research Institute. The purpose of the survey was to identify the awareness and behavior of students who were expected to graduate from universities in the academic year 2018 in their job search and recruitment selection activities (Hamagin Research Institute 2018).

Sampling. Approximately 60 universities across the country were selected based on location, founding institution, and size. Fourth-year undergraduate students and second-year master's students (early Ph.D. students) from each university were asked to participate in the survey. The 2018 survey was conducted between July 13 and August 10, when students accessed and responded to the survey questionnaire website, which was made available on the internet. Students were informed that medical, pharmacy, dental, nursing, and veterinary students, as well as international students, were not included in the target group for the survey.

Sample Characteristics. The number of valid responses was 9,843, consisting of fourth-year undergraduate students (7,575) and second-year master's students (2,268). For the sake of simplicity, I use only fourth-year undergraduate data in the analysis. A total of 45.7% of fourth-year students were male, and 54.3% were female. Compared to the data of fourth-year undergraduate students in the 2018 Basic School Survey (BSS), a national survey of education in Japan, the response rate of female students in this data is higher than that of the BSS (43.6%) (Hamagin Research Institute 2018, p. 14). A total of 19.5% of fourth-year undergraduate students belong to national universities or colleges, 3.3% belong to public universities or colleges, and 77.1% belong to private universities or colleges (ibid). This distribution is similar to that of the BSS (national 18.1%, public 3.3%, private 76.7%). A total of 21.7% of fourth-year students majored in humanities, 46.5% in social sciences, 5.8% in sciences, 10.0% in engineering, 2.2% in agriculture, 2.3% in health, 1.2% in home economics, 3.5% in education, 0.6% in arts, and 6.0% in other fields (ibid., p. 15).

Sample for analysis. The analysis is conducted among fourth-year undergraduate students who reported that they had engaged in job search activities and taken teacher training courses. To study the effect of the timing of the job search activities, it is necessary to exclude from the analysis the students who did not engage in them. It is also appropriate to exclude students who did not take teacher training courses because they had decided not to choose teaching as a career before the job search activities started; in other words, they would never choose teaching whether the timeline was early or not.

To identify students who took the teacher training course, the analysis uses the

respondents who reported taking a student teaching course because students who would receive teaching certificates are required to take the student teaching course in their third or fourth year. The question posed is whether there was an influence of the timing of the job search and recruitment activities (outreach activities began on March 1, and employment screening activities began on June 1) on the scheduling of student teaching. Table 2 shows the options and frequencies of all fourth-year undergraduate students (n=7,575). The respondents who selected 2, 3, 4, 5, and 6 above were identified as having taken the student teaching, which meant that they took the teacher training course.

Table 2: Job search activities' influences on student teaching

No.	Options	n	%
1	I did not originally think about student teaching and did not take it.	6007	79.3
2	It did not affect me because I did (or will do) my student teaching at a time that did not originally fall within the timeline of job search and recruitment activities.	240	3.2
3	I planned to do student teaching but canceled it due to the timeline of job search and recruitment activities.	124	1.6
4	I planned to continue with student teaching but postponed it due to the timeline of job search and recruitment activities.	47	0.6
5	I was worried about job search and recruitment activities, but prioritized my student teaching.	136	1.8
6	I was not particularly concerned about the timeline of job search and recruitment activities and prioritized my student teaching.	96	1.3
-	NA	925	12.2
-	Total (fourth-year undergraduate students)	7575	100.0

Variables

Dependent variable

Teaching Career Choice. The dependent variable is a binary variable that takes the value of 1 if a fourth-year student reported that one would "get a job as teaching staff" after graduating from a college or university and takes the value of 0 if one did not. This is a multiple-choice question about career choices after graduation that were planned or desired at the time the question was answered (in July or August). Table 3 shows the options and frequencies of all fourth-year undergraduate students (n=7,575).

Table 3: Carrer choices after graduation

No.	Options (muple-choice)	n	%
1	I will get a job in the private sector.	6068	80.11
2	I will get a job in the civil service.	724	9.56
3	I will get a job as teaching staff.	208	2.75
4	I will get a job with an NPO.	31	0.41
5	I will be self-employed or work in the family business.	33	0.44
6	I will get a job in other areas.	160	2.11
7	I will enter a higher-level school (in Japan).	625	8.25
8	I will study abroad.	52	0.69
9	I will start a business.	38	0.50
10	As I have working experience, I will return to my former workplace after graduation.	4	0.05
11	I don't know yet.	146	1.93
-	Total (fourth-year undergraduate students)	7575	100.00

Independent variables

Timing of receiving the first early unofficial job offer. One of the independent variables is a binary variable of the timing of receiving the first early unofficial job offer. The timing is divided into five categories, including "Before February", "March", "April", "May", and "June". For example, the variable "March" takes the value of 1 if a respondent received the first early unofficial job offer in March and takes the value of 0 if one did not.

Career choice factors. The other independent variable is also a binary variable of career choice factors. This is a multiple-choice question about what is important to a respondent when deciding where to work. For example, the variable "High social contribution" takes the value of 1 if a respondent chose this option and takes the value of 0 if one did not. The options include those listed below and are grouped into three categories (Table 4). With reference to the previous literature on teaching career choice, variables 1 to 11 are classified as extrinsic motivations, variables 12 to 14 are classified as intrinsic motivations, and variable 15 is classified as altruistic motivation.

Table 4: Career choice factors and three categories

Categories	Options
Extrinsic motivations	<ol style="list-style-type: none"> 1. Stability of companies, etc. 2. Growth potential of companies. 3. Highly well-known. 4. Higher salaries and bonuses/better benefits and social security. 5. Work-Life-Balance (WLB), such as less overtime and holiday time. 6. I can work as a full-time employee. 7. Women can play an active role. 8. Improved support for balancing work and family life, including parental leave and childcare facilities. 9. I can work locally. 10. I can work where I want to work. 11. Workplace atmosphere looks good.
Intrinsic motivations	<ol style="list-style-type: none"> 12. I can make use of my abilities and expertise. 13. I can develop my skills and advance my career. 14. I can do the work I want to do (it is challenging).
Altruistic motivation	<ol style="list-style-type: none"> 15. High social contribution.

Control variables

Gender. The gender variable takes the value of 1 for females and 0 for males.

Type of institution. If a respondent belonged to a national or public university or college, this variable takes the value of 1, while it takes the value of 0 if a respondent belonged to a private university or college.

Major Field. Major field variables are binary variables that take the value of 1 if a respondent majored in a particular field and take the value of 0 if they did not. The question used is a single question about the major field. For example, "Humanities" is a binary variable that takes the value of 1 if a respondent majored in humanities and takes the value of 0 if one did not.

Analytic approach

This study uses logistic regression analysis to examine the effects of the timing of the first early unofficial job offer and the career choice factors on teaching career choice. The missing value is treated by listwise case deletion. As a result, the number of respondents with no missing values is 643, which is 8.48% of the total respondents of fourth-year undergraduate students (n=7,575).

Results

Descriptive statistics

The range (minimum and maximum), means and standard deviations (SD) of all variables are presented in Table 5. The value for the choice of a teaching career is 0.165, which means that on average, 16.5% of the respondents reported that they chose a teaching career. The most frequently reported time of receiving the first early unofficial job offer is May, while the least reported time is August. Among the factors that influenced career choice, the stability of companies, the work one wanted to do, the atmosphere in the workplace, and the salary and bonuses/benefits and social security were considered important. On the other hand, support for WLB, working locally, and growth potential were not considered very important. In terms of control variables, 59.3% of respondents were female. A total of 28.5% of respondents belonged to national or public universities and colleges. The most common field of study was Humanities (26.0%), the second was Social science (21.6%, reference), and the least common was arts (1.9%).

Table 5: Descriptive Statistics

	n	Min	Max	Mean	SD
Choice of teaching career	643	0	1	0.165	0.371
Timing of receiving the first early unofficial job offer :					
Before February	643	0	1	0.053	0.224
March	643	0	1	0.087	0.282
April	643	0	1	0.160	0.367
May	643	0	1	0.218	0.413
June	643	0	1	0.180	0.385
July (Reference)	643	0	1	0.090	0.287
August (Reference)	643	0	1	0.005	0.068
Not receiving (Reference)	643	0	1	0.207	0.405
Career choice factors :					
Extrinsic motivation					
Stability of companies, etc.	643	0	1	0.537	0.499
Growth potential of companies.	643	0	1	0.240	0.427
Highly well-known.	643	0	1	0.202	0.402
Higher salaries and bonuses/better benefits and social security.	643	0	1	0.449	0.498
WLB, such as less overtime and vacation.	643	0	1	0.362	0.481
I can work as a full-time employee.	643	0	1	0.331	0.471
Women can be successful.	643	0	1	0.249	0.433
Improved support for balancing work and family life, including parental leave and childcare facilities.	643	0	1	0.210	0.408
I can work locally.	643	0	1	0.216	0.412
I can work where I want to work.	643	0	1	0.258	0.438
Workplace atmosphere looks good.	643	0	1	0.479	0.500
Intrinsic motivation					
I can make use of my abilities and expertise.	643	0	1	0.244	0.430
I can develop my skills and advance my career.	643	0	1	0.277	0.448
I can do the work I want to do (it is challenging).	643	0	1	0.491	0.500
Altruistic motivation					
High social contribution.	643	0	1	0.288	0.453
Control variables					
Gender (Female=1, Male=0)	643	0	1	0.593	0.492
Type of institution (National/Public=1, Private=0)	643	0	1	0.285	0.452
Major field:					
Social science (Reference)	643	0	1	0.216	0.412
Humanities	643	0	1	0.260	0.439
Science	643	0	1	0.089	0.284
Engineering	643	0	1	0.051	0.221
Agriculture	643	0	1	0.023	0.151
Health	643	0	1	0.040	0.197
Home economics	643	0	1	0.053	0.224
Education	643	0	1	0.201	0.401
Arts	643	0	1	0.019	0.135
Other fields	643	0	1	0.048	0.214

Results for logistic regression analysis

Table 6 shows the results of the logistic regression analysis that examines how the timing of the first early unofficial job offer and the career choice factors affect the choice of teaching as a career. In the logistic regression analysis, the odds ratio (OR) indicates that there is a positive relationship between a dependent and independent variable when $OR > 1$, while there is a negative relationship when $OR < 1$. Based on the Nagelkerke R^2 (0.465), this model explained 46.5% of the variation in the choice of a teaching career among fourth-year undergraduate students who took the teacher training course.

Receiving the first early unofficial job offer before July (from before February to June) is likely to reduce the probability of choosing teaching as a career. This result indicates that the timeline of job search activities being earlier than the teacher recruitment practice might have a negative effect on the decision making by the potential teacher candidates, namely, on the undergraduate students who took the teacher training course, about choosing a teaching career.

In terms of the students' career choice, the emphasis on the stability of companies, growth potential, WLB factors such as less overtime and vacation, women's success, and workplace atmosphere are negatively related to the choice of teaching career. This means that students who thought these factors were important, similar to the extrinsic motivations in the FIT-Choice framework, did not choose teaching as a career even though they took the teacher training course.

In contrast, focusing on making use of one's abilities and expertise is likely to increase the probability of choosing teaching. This factor is similar to the intrinsic motivation focused on in the research using the FIT-Choice framework.

In addition, importantly, other career choice factors, such as salaries and bonuses/benefits and social security, working locally (classified in the extrinsic motivations), the work one wants to do (classified in the intrinsic motivations), and social contribution (classified in the altruistic motivations), are not associated with the choice of a teaching career although these factors seemed to influence the choice in previous research.

Table 6: Logistic regression analysis of fourth-year undergraduate students who engaged in student teaching: Choice of a teaching career

Dependent Variable: Choice of teaching career		Coef.	S.E.	Odds Ratio	
Timing of receiving the first early unofficial job offer	Before February	-2.270	0.800	0.103	**
	March	-2.193	0.592	0.112	***
	April	-3.026	0.763	0.048	***
	May	-1.855	0.395	0.156	***
	June	-2.296	0.490	0.101	***
Ref) July, August, and no early unofficial job offer					
Career choice factors					
Extrinsic motivation	Stability of companies, etc.	-0.778	0.302	0.459	*
	Growth potential of companies.	-1.059	0.458	0.347	*
	Highly well-known.	-0.402	0.475	0.669	
	Higher salaries and bonuses/better benefits and social security.	-0.005	0.319	0.995	
	WLB, such as less overtime and vacation.	-0.851	0.358	0.427	*
	I can work as a full-time employee.	0.536	0.329	1.710	
	Women can be successful.	-0.759	0.416	0.468	+
	Improved support for balancing work and family life, including parental leave and childcare facilities.	0.350	0.417	1.419	
	I can work locally.	0.459	0.338	1.583	
	I can work where I want to work.	0.388	0.352	1.474	
Intrinsic motivation	Workplace atmosphere looks good.	-0.879	0.315	0.415	**
	I can make use of my abilities and expertise.	0.725	0.313	2.065	*
	I can develop my skills and advance my career.	-0.110	0.348	0.896	
Altruistic motivation	I can do the work I want to do (it is challenging).	0.515	0.316	1.674	
	High social contribution.	0.206	0.325	1.229	
Control Variables					
	Gender (Female=1, Male=0)	0.487	0.355	1.627	
	Type of institution (National/Public=1, Private=0)	-0.594	0.352	0.552	+
	Major field (Reference: Social science):				
	Humanities	0.398	0.420	1.489	
	Science	0.194	0.583	1.214	
	Engineering	-0.407	0.757	0.666	
	Agriculture	-0.491	1.191	0.612	
	Health	0.107	0.767	1.113	
	Home economics	-1.486	1.181	0.226	
	Education	1.054	0.477	2.868	*
Art	-0.381	1.219	0.683		
Other fields	-0.816	0.814	0.442		
(Constant)		-0.526	0.407	0.591	
Nagelkerke R2		0.465			
Model chi-square		207.009			***
n		643			

***: p<0.001, **: p<0.01, *: p<0.05, +: p<0.1

Conclusion

This study investigated how the timelines of teacher recruitment and job search activities affected potential teacher candidates in Japan. In particular, the analysis examined how the timelines of job search activities, which occur earlier than the period of teacher recruitment, affected new graduates' decisions about whether to become teachers as the institutional environment. The analysis also examined the career choice factors, classified into altruistic, intrinsic, and extrinsic motivations as discussed in the research using the FIT-Choice scales, and used a nationwide survey of university and college students in Japan.

As a result, this study found that receiving the first early unofficial job offer before July, when the first-stage screening examination for teacher recruitment starts, made the fourth-year undergraduate students who took the teacher training course decide not to choose teaching as a career. This result suggests that even though a student took the teacher training course, receiving an early unofficial job offer might lead them to finish their job search activities and stop applying for teacher recruitment. While it is well known from previous research that late teacher hiring causes school districts and principals to lose out on high-quality teacher candidates, the results of this study suggest that teacher recruitment being later than that of the private sector also causes educational boards to lose out on potential teacher candidates.

In terms of career choice factors, on the one hand, students who considered it important to be able to make use of their abilities and expertise chose teaching as a career. On the other hand, students who considered the stability of companies, their growth potential, WLB factors such as less overtime and vacation, women's success, and workplace atmosphere to be important did not choose teaching as a career. While intrinsic and altruistic motivations have received much attention as the key factors influencing the choice of teaching career, the results of this study suggest that extrinsic motivations might affect nonchoice, in other words, the avoidance of a teaching career.

The reason for the positive effect of "I can use my abilities and expertise" is that the respondents might associate this question with obtaining teaching certificates, which is necessary to work as a teacher in Japan. It is also appropriate to consider that the word "companies" in the two variables was the main reason for their negative effects on the choice of a teaching career.

The negative effects of WLB, women's success, and the workplace atmosphere might stem from the influence of the negative images of teachers' busyness and their work environment in Japan. These negative images include long hours, overtime, and holiday work. In the late 2010s, several surveys revealed the tendency of Japanese teachers to work long

hours. For example, Japan's Ministry of Education, Culture, Sports, Science, and Technology (MEXT) conducted Surveys on Teachers' Working Conditions in 2006 and 2016. In 2016, they found that teachers' working hours became longer than those in 2006 (MEXT 2018). These results were reported by the Japanese media and received much public attention in the late 2010s, as this could lead to the negative effects of WLB, women's success and the workplace atmosphere. A similar trend of a negative association between the extent of teachers' long working hours and students' teaching career expectations was also found by Han et al. (2017) in their analysis of cross-national data from the Program for International Student Assessment (PISA). In addition, after the 2018 survey which this study used was conducted, The OECD reported the results of the Teaching and Learning International Survey (TALIS) 2018 and found that teachers' working hours in Japan were the highest among the countries participating in TALIS (National Institute for Educational Policy Research 2019).

This study also has implications for teacher recruitment policies in Japan. Since the 2010s, it has been discussed that the timing of teacher recruitment practices is too late compared to job search activities in the private sector (CEC 2015; 2022). Although this study revealed that the timing of receiving the first early unofficial job offer before the first screening examination for teacher recruitment had a negative effect on the choice of a teaching career, the results also suggested that the negative images of teachers' working environment might have a negative effect on the choice of a teaching career. This means that simply moving the timing of the teacher recruitment examination earlier would not change the decisions of potential teacher candidates, unless the negative images of teachers' working environment also changed. Therefore, this study argues that it is necessary for the Japanese government to try to solve the teacher shortage not only in terms of the timeline of teacher recruitment but also in terms of teachers' working environment.

This study has several limitations. First, because the data used were cross-sectional, the analysis could not rigorously investigate the chronological order and causal relationship between independent and dependent variables. This means that the results could be viewed in two ways: (1) the students who received the first early unofficial job offer before July decided not to choose teaching as a career, or (2) the students who decided not to choose teaching as a career engaged in their job search activities aggressively to receive the first early unofficial job offer before July. To determine which is the correct relationship, it is necessary to examine using other variables that might allow them to be distinguished or to use panel data. Second, the survey used did not include the questions according to the FIT-Choice scales due to the second analysis. Thus, while these results could not directly supplement the existing studies that use the FIT-Choice scales, they may provide some insight into the choice and

avoidance of a teaching career in light of intrinsic, extrinsic, and altruistic motivations.

Acknowledgment

This study was supported by the Japan Society for the Promotion of Science Grant-in-Aid for Research Activity Start-up (Grant Number JP22K20282).

The data for the secondary analysis, “Survey on Timing of Students' Job-Hunting Activities, 2018, Director General for Economic Policy Planning, Cabinet Office,” was provided by the Social Science Japan Data Archive, Center for Social Research and Data Archives, Institute of Social Science, The University of Tokyo.

References

- CEC, 2015, “Improving the qualifications of teachers responsible for school education in the future (report)” [in Japanese]. Retrieved November 20, 2023, from https://www.mext.go.jp/component/b_menu/shingi/toushin/_icsFiles/afieldfile/2016/01/13/1365896_01.pdf
- CEC, 2022, “The way forward the training, recruitment and in-service training of teachers for 'Japanese-style school education in Reiwa period'.” [in Japanese]. Retrieved November 20, 2023, from https://www.mext.go.jp/content/20221219-mxt_kyoikujinzai01-1412985_00004-1.pdf
- Engel, M., 2009, “Time-Out on Timing: The Relationship between the Timing of Teacher Hires and Teacher Quality.” *Working Paper 2009-04*. https://cdn.vanderbilt.edu/vu-my/wp-content/uploads/sites/584/2012/10/14100852/200904_Engel_TeacherHires1.pdf
- Engel, M., 2012, “The Timing of Teacher Hires and Teacher Qualifications: Is There an Association?” *Teachers College Record* 114 (12): 1–29.
- Fray, L., and Gore, J., 2018, “Why People Choose Teaching: A Scoping Review of Empirical Studies, 2007–2016.” *Teaching and Teacher Education*, 75: 153–163.
- Gorard, S., Ventista, O., Morris, R., and See, B. H., 2021, “Who wants to be a teacher? : Findings from a survey of undergraduates in England.” *Educational Studies* 49: 1–23.
- Hamagin Research Institute, 2018, “Research result report on the Survey on Timing of Students' Job-Hunting Activities” [in Japanese]. Retrieved October 28, 2023, from <https://www5.cao.go.jp/keizai1/gakuseichosa/pdf/20181130houkokusyo.pdf>
- Han, S. W., Borgonovi, F. and Guerriero, S. (2017) “What Motivates High School Students to Want to Be Teachers? The Role of Salary, Working Conditions, and Societal Evaluations About Occupations in a Comparative Perspective.” *American Educational*

Research Journal. 55(1): 3–39.

- Heinz, M., 2015, “Why Choose Teaching? : An International Review of Empirical Studies Exploring Student Teachers’ Career Motivations and Levels of Commitment to Teaching.” *Educational Research and Evaluation*. 21(3): 258–297.
- Iwata, Y., 2015, [translated by Omori, A.,] “On ‘Japanese Style’ Teacher Education Reform: Considering Issues of Quality Development under an ‘Open System.’” *Educational Studies in Japan: International Yearbook*, No. 9, March, 2015: 81–97.
- Lee, S. W., 2022, “Keeping an eye on the clock: the role of timing and teacher hiring in the education”, *Educational Studies* 48(4): 513-528.
- Levin, J., and Quinn, M., 2003, “Missed Opportunities: How We Keep High-quality Teachers Out of Urban Classrooms.” New York: New Teacher Project. <https://tntp.org/assets/documents/MissedOpportunities.pdf>
- Liu, E. and Johnson, M. J., 2006, “New Teachers' Experiences of Hiring: Late, Rushed, and Information-Poor”, *Educational Administration Quarterly* 42(3): 324-360.
- MEXT, 2018, “The definite value of Surveys on Teachers' Working Conditions (2018 school year)” [in Japanese]. Retrieved November 20, 2023, from https://www.mext.go.jp/component/a_menu/education/detail/_icsFiles/afieldfile/2018/09/27/1409224_003_4.pdf
- National Institute for Educational Policy Research, 2019, “Current situations and challenges of teachers in Japan” [in Japanese]. Retrieved November 20, 2023, from https://www.nier.go.jp/kokusai/talis/pdf/talis2018_points.pdf
- Papay, J. P., and M. A. Kraft., 2016, “The Productivity Costs of Inefficient Hiring Practices: Evidence from Late Teacher Hiring.” *Journal of Policy Analysis and Management* 35 (4): 791–817.
- Savage, C., Ayaita, A., Hübner, N., and Biewen, M., 2021, “Who Chooses Teacher Education and Why?: Evidence From Germany.” *Educational Researcher*, 50(7): 483-487.
- Stokes, Anthony (2007) “Factors Influencing the Decisions of University Students to Become High School Teachers.” *Issues in Educational Research*. 17(1): 127-145.
- See, B. H., Munthe, E., Ross, S. A., Hitt, L., and Soufi N. E., 2022, “Who becomes a teacher and why?”, *Review of Education* 10(3): 1-40.
- Watt, H. M. G., and Richardson, P. W., 2007, “Motivational Factors Influencing Teaching as a Career Choice: Development and Validation of the FIT-choice Scale.” *Journal of Experimental Education*. 75(3): 167–202.
- Watt, H. M. G. and Richardson, P.W., 2012, “An introduction to teaching motivations in different countries: comparisons using the FIT-Choice scale,” *Asia-Pacific Journal of Teacher Education*, 40(3) :185-197.

Watt, H. M. G., and Richardson, P. W., Klusmann, U., Kunter, M., Beyer, B., Trautwein, U., and Baumert, J., 2012, "Motivations for Choosing Teaching as a Career: An International Comparison Using the FIT-Choice Scale." *Teaching and Teacher Education*. 28(6): 791–805.