Whose Risk of Non-Regular Employment at Labor Market Entry Has Increased in Japan?

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Abstract

This study attempts to clarify whose risk of non-regular employment at labor market entry has increased since about the mid-1990s in Japan by focusing on social class, education and gender. I use the data of SSM1985, SSM1995, SSM2005, and SSM2015, which include respondents whose labor market entry cohort ranges from 1955 to 2015. First, I reveal how occupational composition at labor market entry has changed over time. The result indicates that the rate of non-regular employment at labor market entry has increased over time, while on the other hand, that of white-collar and regular jobs has decreased since the mid-1970s. Second, I examine whether risks of non-regular employment vary depending on social groups such as the father's social class and respondent's education, and gender, and how these differences have changed over time. The results reveal that the risk of non-regular employment has rapidly increased among lower-educated women, which indicates the educational difference of the risk has enlarged for women since about the mid-1990s. On the other hand, for men, the educational difference has not increased. In addition, there are not large differences between fathers' social classes. For gender, women are more likely to obtain non-regular employment, and the gender difference has not changed over time. Finally, I interpret the results and discuss why the educational difference has increased among lower-educated women in Japan.
Keywords: school-to-work transition, no-regular employment, youth labor market

1. Introduction

In industrialized societies, most people get their first job, which has a considerable impact on current occupational status, after finishing school. Therefore, for several decades, researchers on social stratification have paid attention to the "school-to-work transition" (Rosenbaum and Kariya 1989; Rosenbaum et al. 1990; Shavit and Müller 1998; Müller and Gangl 2003; DiPrete 2017). They have focused on the fact that the association between education and labor market entry outcomes varies across countries and explored what educational system formed the configuration of the association.

Meanwhile, due to globalization or the flexibilization of employment, the

school-to-work transition has destabilized since about the end of the 20th century in many industrialized societies. As a response, in recent years, previous studies have explored social inequalities for youth in the era of globalization (Mills and Blossfeld 2005; Blossfeld et al. 2011; Blossfeld et al. 2015; Wolber 2016). They conduct an international comparison analysis, mainly in Europe and the United States, exploring the relationship between the country specific institution and social inequalities in the deterioration of the youth labor market. For example, Blossfeld et al. (2011) argue that in countries where labor market fluidity is low, the process of globalization deepens the chasm between a strongly protected male-dominated core group and periphery groups consisting of young people and women. In contrast, in countries with fluid employment, individuals' resources such as skills and education strongly affect employment risk.

In Japan, due to the hiring of new graduates and the institutional linkage between high schools and employers (Rosenbaum and Kariya 1989), until the 1980s, most men shifted to regular employment immediately after graduating from school. However, since about the mid-1990s, employers have begun to decrease regular employment for new graduates and to increase that of non-regular employment, which resulted in an increase youth who cannot start regular employment in their first job (Kosugi and Hori 2002). As the results in this paper show, for Japanese youth, the rate of non-regular employment at labor market entry increased from approximately 5% in the 1970s to approximately 25% in the 2000s.

In response to the abovementioned change, previous studies have paid attention to these issues and have described what occurred in the school-to-work transition or the youth labor market in Japan (JILPT 1998; Mimitsuka 2001; Genda 2001; Kosugi 2002; Honda 2005; Tsutsui 2006; Ohta 2010; Kariya and Honda 2010; Brinton 2010; Hori 2016). In this paper, I examine the victims of the expanding non-regular employment among youth in the mid-1990s. As I discuss in next subsection, although previous researchers revealed the risks of non-regular employment varies across social class, education, and gender, few studies have attempted to examine how these differences across social groups have changed since the mid-1990s. This paper attempts to clarify whose risk of non-regular employment at labor market entry has increased since about the mid-1990s.

2. Previous Studies

Previous studies have explored who is more likely to be exposed to a high risk of

non-regular employment in their initial career. In this section, I review these studies by focusing on three factors: social class, education, and gender[1].

First, I consider social class. Studies on social stratification, which try to explore how parent social class leads to children's occupational success, also reveal that the father's social class has a positive impact on the chance of children's occupational success in their first job even after controlling for education (Blau and Duncan 1967; Ishida 1993). It is assumed that parents' economic, cultural and social capital play an important role in increasing the chance of children's occupational success. Taking these matters into account, there is a possibility that while new precarious jobs have been expanding over time, youth who are from lower social classes are more likely to obtain non-regular employment. However, previous studies reveal that the effect of the father's social class is inconsistent. Some studies reveal that youth with fathers whose social class is lower tend to work in non-regular employment (Mimitsuka 2002; Tarohmaru 2006)[2]. Other studies indicate that non-regular employment in an initial career is not significantly related to the father's occupation (Kariya et al. 1997). In addition, it has also been reported that the effect of the father's occupation on risk of non-regular employment at labor market entry was not statistically significant (Ishida 2005; Hayashi and Sato 2011).

Second, I review previous studies examining educational differences. Most of the studies reveal that lower-educated people are more likely to obtain non-regular employment at labor market entry or in the initial career (Kurosawa and Genda 2001; Tarohmaru 2006; Hayashi and Sato 2011; Sato 2011). High school graduates suffered more seriously from the deterioration of youth labor market in the mid-1990s. Until the 1980s, for high school graduates, the number of job offers for new graduates was sufficient, and there were the strong institutional linkages between high schools and employers in Japan (Rosenbaum and Kariya 1989). However, since about the mid-1990s, employers began to decrease new jobs for high-school students (Kosugi and Hori 2002) and to substitute higher-educated people or non-regular employment (Ohta 2010). In addition, as the recruitment of high school new graduates has declined, the institutional linkage between high schools and employers has weakened over time (JILPT 1998;

[1] Some studies focus on university graduates, and examine the effect of the university ranking or network on occupational outcome such as regular employment or the size of the company (Hirasawa 2011; Kariya and Honda 2010). Since this paper focuses on the differences between high school and university graduates, I do not review these studies.

[2] In their research, the independent variable is 'freeter' in Japanese. It is often defined as young people who do not work or work in non-regular employment. Married women who are homeworkers are excluded from this category, although the definition varies from study to study.

Honda 2005). According to the above discussion, it is quite likely that more and more lower-educated youth have been obtaining non-regular employment over time.

Moreover, there is a possibility that the educational effect varies from gender to gender. Ishida (2005) reveals that after controlling for other factors, lower-educated women are more likely to obtain non-regular employment at labor market entry, but there is not an educational difference for men. Honda (2003) indicates that for a younger cohort, lower-educated women tend to obtain non-regular employment at labor market entry. In this paper, I focus on the interaction effects between education and gender.

Third, as for gender, all of the abovementioned studies reveal that women tend to obtain non-regular employment at initial career or labor market entry. It seems that this gender gap is due to various factors such as gender discrimination in employment or the gender role attitudes that women internalize through their parents' expectations (Honda 2002). In this paper, I consider the question of whether the gender difference has changed over time.

As I reviewed, previous studies have revealed that particular groups are more likely to obtain non-regular employment at their initial career or first job. However, little research has been done to clarify how the differences between these groups have changed since about the mid-1990s. Hayashi and Sato (2011) examined whether the effects of education or father's occupation have changed for men. This paper focuses on women as well as men and examines gender gap or interaction effects between gender and education.

3. Data and Variables

Data

The data used in this analysis are from the National Survey of Social Stratification and Social Mobility (SSM Survey), which was conducted in 1985, 1995, 2005, and 2015. The data include respondents whose labor market entry cohort ranges from 1955 to 2015. Only those under 59 years of age are considered because the answers of respondents over 60 years of age are outdated. I exclude the respondents who graduated from their last school or got their first job at over 30 years of age, got their first job before graduating from their school, and/or attended school under the old system.

Table 1 reveals the numbers of the sample by labor market entry cohort and by year of survey. As Table 1 shows, the size of the oldest cohort (1955-63) and that of the

youngest cohort (2005-15) are small, so I merge these categories into another one in some of the analyses.

Table 1. Sample Size by Year of Survey and Labor Market Entry Cohort

		Year of survey									
		Men					Women				
		1985	1995	2005	2015	Total	1985	1995	2005	2015	Total
Labor market entry cohort	1955-63	475	186	34	0	695	223	226	37	0	486
	1964-72	480	235	415	10	1140	302	283	516	4	1105
	1973-82	377	190	443	378	1388	223	264	502	500	1489
	1983-92	55	178	435	518	1186	39	194	486	650	1369
	1993-04	0	27	330	575	932	0	30	401	716	1147
	2005-15	0	0	0	305	305	0	0	0	379	379
	Total	1387	816	1657	1786	5646	787	997	1942	2249	5975

Variables

The dependent variable is the non-regular employment at labor market entry, which is a binary variable indicating whether the first job is non-regular employment or not. Non-regular employment includes various types of employment: temporary employee or part-time employee, employee dispatched by a temporary employment agency, contract employee, employee on a short-term contract, and home worker[3]. The other category includes regular full-time employee, company president or executive, and self-employment or family worker.

In some of the analyses, I use another occupational index based on the SSM General Occupation Classification and the binary variable of non-regular employment. It has eight categories: professional and manager, white-collar worker in large firms, white-collar worker in small and medium firms, self-employed or farmer, blue-collar worker in large firms, blue-collar worker in small or medium firms, non-regular and white-collar worker, and non-regular and blue-collar worker. The last two categories are non-regular employment. The others are regular-worker or self-employment. A large firm is a firm that has over 300 employees.

The independent variables are defined as follows.

・*Education* has five categories: junior high school, high school, vocational school, two-year college, and university or graduate school. The education includes people

[3] In SSM, the question of employment status differs from period to period. In 1985, non-regular employment was temporary or part-time employment. In 1995, “contract employee” was added to the options for the question. In 2005, “employee dispatched by a temporary employment agency” was added.

who dropped out, although the rate is very small. Table 2 shows the distribution of education by labor market entry cohort. As Table 2 indicates, the rates of lower-educated people such as junior high school or high school students have been decreasing over time; on the other hand, the rates of university students have been increasing over time for men and women.

- *Father's occupation* has five categories: professional or manager, clerk or sales, skilled worker, semi- or non-skilled worker, and self-employed or farmer. I created this by referring to the SSM Occupation Classification (eight categories) and employment status.
- *Father's education* has three categories: lower education, middle education, and higher education. Lower education includes primary school under the old education system and junior high school under the new education system. Middle education includes middle school, occupational school, and teacher's school under the old education system and high school under the new education system. Higher education includes secondary school, vocational college, and high teacher's school under the old system and two-year college, vocational college, university, and graduate school under the new education system.
- *Unemployment rate* is the value at the previous year of the labor market entry cohort.

Table 2. Distribution of Education by Labor Market Entry Cohort

		Men						Women					
		Junior high school	High school	Vocational school	Two-year college	University	Total (N)	Junior high school	High school	Vocational school	Two-year college	University	Total (N)
Labor market entry cohort	1955-63	37.7	42.2	5.9	1.0	13.2	695	35.2	39.3	20.6	3.1	1.9	486
	1964-72	18.4	53.4	5.4	2.0	20.8	1140	16.4	56.2	15.6	8.1	3.7	1105
	1973-82	5.0	49.6	6.8	3.5	35.0	1388	3.4	54.9	13.6	18.7	9.4	1489
	1983-92	5.5	43.8	11.1	2.1	37.5	1186	2.9	45.0	17.4	19.7	15.0	1369
	1993-04	2.8	33.2	17.5	2.5	44.1	932	1.7	30.5	16.5	24.1	27.3	1147
	2005-15	2.0	24.6	16.1	2.0	55.4	305	1.6	28.2	18.5	13.2	38.5	379

3. Analysis

3.1 Trend of Occupational Composition at Labor Market Entry

This subsection considers how the rate of non-regular employment at labor market entry has changed over time. Figure 1 and Table 3 reveal the occupational composition of the first job by labor market entry cohort. I consider the tendency from Figure 1, which

shows Table 3 graphically. As seen in Figure 1, the rates of non-regular blue-collar jobs and non-regular white-collar jobs have increased over time. They were approximately 5% until the mid-1970s, but they gradually increased in the 1980s and leaped to approximately 25% in the 2000s. The rate of professionals increased in the 1970s and the 1980s, after that it remained steady. On the other hand, white-collar jobs in large firms and in small or medium firms have been decreasing since the mid-1970s. The rate of blue-collar jobs in large firms and in small or medium firms also decreased over time.

Next, I look into whether the trend of occupational composition varies from gender to gender from Figure 2 and Table 4. Table 4 shows occupational composition by gender. As Table 4 shows, it is difficult to grasp the trend, so I look at the result from Figure 2, where I categorized labor market entry cohorts by approximately 10 years. As seen in Figure 2, for both men and women, the rates of non-regular employment increased over time, but the ratio of white-collar jobs to blue-collar jobs are different by gender. For men, the ratio is fifty-fifty; on the other hand, for women, the ratio of white-collar jobs is high, which indicates that women are more likely than men to obtain white-collar and non-regular jobs. In addition, the result shows the downward trend of white-collar job. When I compare the rate of white-collar jobs in large firms in 1973-82 with that of 2005-2015, the reduction rate is approximately 5% for men, but for women, it is over 10% (30.1% in 1973-82, 17.3% in 2005-15). I can also confirm the same tendency towards white-collar jobs in small and medium firms.

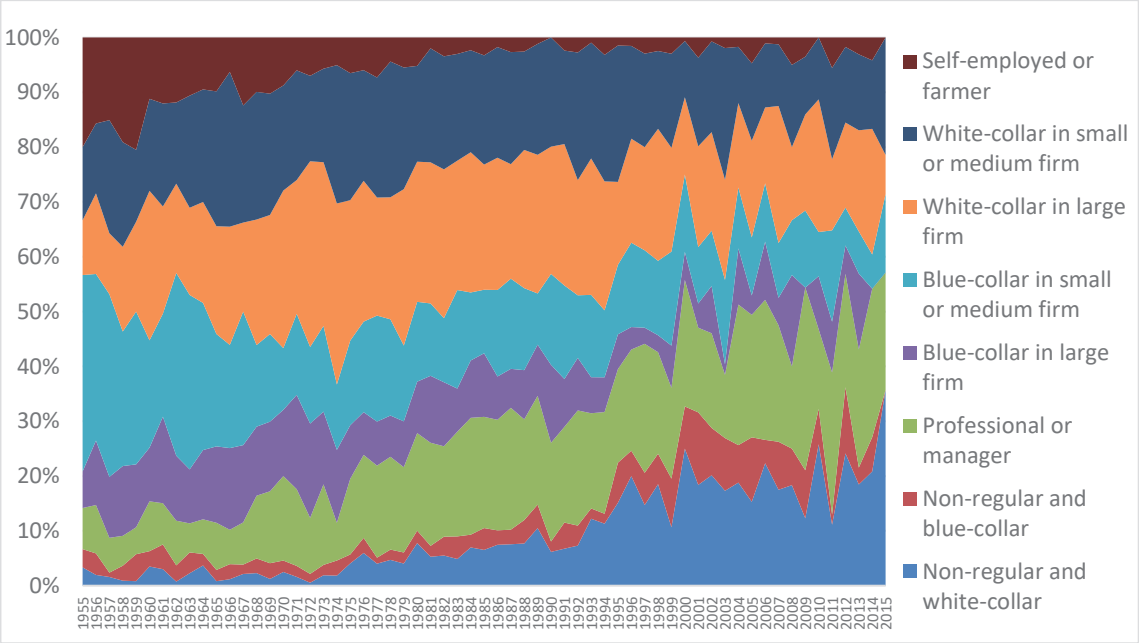

Figure 1. Occupational Composition of the First Job by Labor Market Entry Cohort

Table 3. Occupational Composition of the First Job by Labor Market Entry Cohort.

	Professional or manager	White-collar in large firm	White-collar in small or medium firm	Self-employed or farmer	Blue-collar in large firm	Blue-collar in small or medium firm	Non-regular and white-collar	Non-regular and blue-collar	N
1955	7.5	10.0	13.3	20.0	6.7	35.8	3.3	3.3	120
1956	8.8	14.7	12.7	15.7	11.8	30.4	2.0	3.9	102
1957	6.3	11.1	20.6	15.1	11.1	33.3	1.6	0.8	126
1958	5.5	15.5	19.1	19.1	12.7	24.5	0.9	2.7	110
1959	4.9	16.4	13.1	20.5	11.5	27.9	0.8	4.9	122
1960	9.1	27.3	16.8	11.2	9.8	19.6	3.5	2.8	143
1961	7.5	19.5	18.8	12.0	15.8	18.8	3.0	4.5	133
1962	8.1	16.3	14.8	11.9	11.9	33.3	0.7	3.0	135
1963	5.3	15.9	20.5	10.6	9.8	31.8	2.3	3.8	132
1964	6.3	18.4	20.5	9.5	12.6	26.8	3.7	2.1	190
1965	8.6	19.7	24.6	9.8	13.9	20.5	0.8	2.0	244
1966	6.3	21.6	28.2	6.3	14.9	18.8	1.2	2.7	255
1967	7.7	16.2	21.4	12.4	14.1	24.4	2.1	1.7	234
1968	11.5	22.9	23.3	9.9	12.6	14.9	2.3	2.7	262
1969	13.1	21.7	22.1	10.2	12.7	16.0	1.2	2.9	244
1970	15.4	28.8	19.2	8.8	12.1	11.3	2.5	2.1	240
1971	14.0	24.4	20.0	6.0	17.2	14.8	1.6	2.0	250
1972	10.2	33.9	15.6	7.0	17.2	14.0	0.5	1.6	186
1973	14.7	29.9	17.1	5.7	13.3	15.6	1.9	1.9	211
1974	6.9	33.0	25.2	5.0	13.3	11.9	1.8	2.8	218
1975	13.8	25.6	23.2	6.5	9.8	15.4	4.1	1.6	246
1976	15.1	25.7	20.2	6.0	7.8	16.5	6.0	2.8	218
1977	16.8	21.5	21.9	7.3	8.0	19.3	4.0	1.1	274
1978	16.9	22.3	24.8	4.4	7.5	17.6	4.7	1.9	319
1979	15.6	28.5	22.2	5.5	8.4	13.8	4.0	2.0	347
1980	17.8	25.6	17.5	5.2	9.4	14.6	7.8	2.3	309
1981	18.8	25.7	20.8	2.0	12.2	13.2	5.3	2.0	303
1982	16.5	27.1	20.6	3.4	11.7	11.7	5.5	3.4	291
1983	19.1	23.6	19.5	3.0	7.9	18.0	4.9	4.1	267
1984	21.3	25.6	18.6	2.3	10.5	12.4	7.0	2.3	258
1985	20.3	22.8	19.9	3.3	11.6	11.6	6.5	4.0	276
1986	20.2	24.1	20.2	1.8	7.9	15.8	7.5	2.6	228
1987	22.2	20.9	20.4	2.7	7.1	16.4	7.6	2.7	225
1988	18.4	25.2	17.9	2.6	9.0	15.0	7.7	4.3	234
1989	19.8	25.3	20.2	1.2	9.3	9.3	10.5	4.3	257
1990	18.0	23.2	19.9	0.0	14.2	16.6	6.2	1.9	211
1991	17.5	25.8	17.1	2.4	8.7	17.1	6.7	4.8	252
1992	21.0	21.0	23.3	2.7	9.6	11.4	7.3	3.7	219
1993	17.4	24.9	21.1	0.9	6.6	15.0	12.2	1.9	213
1994	18.6	23.5	23.1	3.2	6.3	12.2	11.3	1.8	221
1995	17.1	15.1	24.9	1.5	6.3	12.7	15.1	7.3	205
1996	18.5	19.0	16.9	1.5	4.1	15.4	20.0	4.6	195
1997	23.5	18.8	17.1	2.9	2.9	14.1	14.7	5.9	170
1998	18.5	24.1	14.2	2.5	3.1	13.6	18.5	5.6	162
1999	16.6	18.9	17.2	3.0	7.7	17.2	10.7	8.9	169
2000	23.1	14.1	10.3	0.6	5.1	14.1	25.0	7.7	156
2001	15.4	18.4	16.2	3.7	4.4	10.3	18.4	13.2	136
2002	17.3	18.0	16.5	0.7	8.6	10.1	20.1	8.6	139
2003	11.5	18.3	24.0	1.9	1.9	15.4	17.3	9.6	104
2004	25.6	15.4	10.3	1.7	10.3	11.1	18.8	6.8	117
2005	22.4	17.6	14.1	4.7	3.5	10.6	15.3	11.8	85
2006	25.5	13.8	11.7	1.1	10.6	10.6	22.3	4.3	94
2007	21.3	25.0	11.3	1.3	5.0	10.0	17.5	8.8	80
2008	15.0	13.3	15.0	5.0	16.7	10.0	18.3	6.7	60
2009	33.3	17.5	10.5	3.5	0.0	14.0	12.3	8.8	57
2010	14.5	24.2	11.3	0.0	9.7	8.1	25.8	6.5	62
2011	25.9	13.0	16.7	5.6	9.3	16.7	11.1	1.9	54
2012	20.7	15.5	13.8	1.7	5.2	6.9	24.1	12.1	58
2013	21.5	18.5	13.8	3.1	13.8	7.7	18.5	3.1	65
2014	27.1	22.9	12.5	4.2	0.0	6.3	20.8	6.3	48
2015	21.4	7.1	21.4	0.0	0.0	14.3	35.7	0.0	14

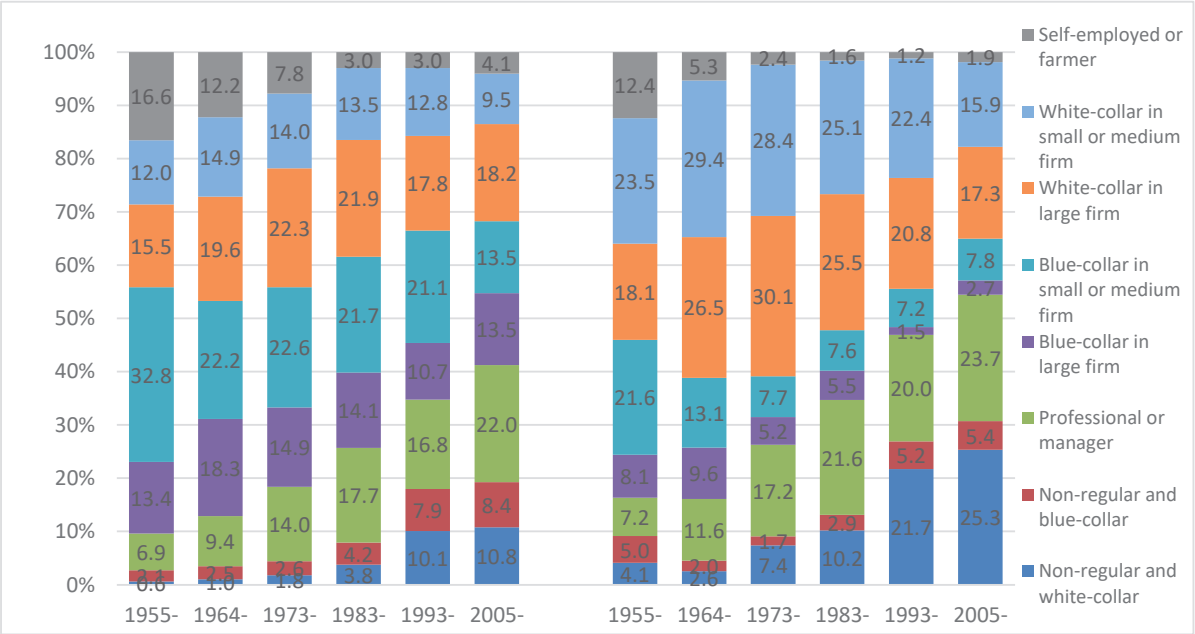

Figure 2. Occupational Composition of the First Job by Labor Market Entry Cohort (by Gender)

3.2 Whose Risk of Non-Regular Employment Has Increased?

This subsection considers whether the probability of obtaining non-regular employment at labor market entry is different according to the father's social class and how the difference has changed over time. Table 5 reveals the cross tabulation between father's occupation and non-regular employment at labor market entry at four periods for men and women. To grasp the feature easily, I graphically show the rates of non-regular employment in Figure 3. As seen in Table 5 and Figure 3, I can confirm respondents whose father's occupation is professional or manager are less likely to obtain non-regular employment for men; on the other hand, respondents whose father's occupation is skilled worker are less likely to obtain non-regular employment for women. However, as Table 5 shows, most of the chi-square values are not significant, which indicates there is little difference between father's occupations. These results also reveal that the differences between father's occupations have not changed over time.

Next, I move to the father's education. Table 6 and Figure 4 reveal the rate of non-regular employment by father's education. As seen in Table 6 and Figure 4, I can confirm a similar tendency as father's occupation. All of the chi-square values are not significant for men and women, which indicates there is no difference in non-regular employment risk between father's educations. Taking the result of father's occupation into account, I may say that father's social class does not make a strong impact on

obtaining non-regular employment at labor market entry.

Table 4. Occupational Composition of the First Job by Labor Market Entry Cohort (by Gender)

	Men									Women								
	Professional or manager	White-collar in large firm	White-collar in small or medium firm	Self-employed or farmer	Blue-collar in large firm	Blue-collar in small or medium firm	Non-regular and white-collar	Non-regular and blue-collar	N	Professional or manager	White-collar in large firm	White-collar in small or medium firm	Self-employed or farmer	Blue-collar in large firm	Blue-collar in small or medium firm	Non-regular and white-collar	Non-regular and blue-collar	N
1955	6.9	9.7	11.1	27.8	8.3	31.9	1.4	2.8	72	8.3	10.4	16.7	8.3	4.2	41.7	6.3	4.2	48
1956	11.9	13.4	9.0	13.4	14.9	35.8	0.0	1.5	67	2.9	17.1	20.0	20.0	5.7	20.0	5.7	8.6	35
1957	3.8	11.3	17.5	17.5	10.0	38.8	1.3	0.0	80	10.9	10.9	26.1	10.9	13.0	23.9	2.2	2.2	46
1958	2.9	15.7	10.0	22.9	17.1	30.0	0.0	1.4	70	10.0	15.0	35.0	12.5	5.0	15.0	2.5	5.0	40
1959	5.0	16.7	3.3	21.7	15.0	36.7	0.0	1.7	60	4.8	16.1	22.6	19.4	8.1	19.4	1.6	8.1	62
1960	11.1	24.7	12.3	8.6	14.8	24.7	0.0	3.7	81	6.5	30.6	22.6	14.5	3.2	12.9	8.1	1.6	62
1961	6.5	15.6	13.0	14.3	19.5	26.0	1.3	3.9	77	8.9	25.0	26.8	8.9	10.7	8.9	5.4	5.4	56
1962	8.3	16.7	11.9	11.9	11.9	36.9	0.0	2.4	84	7.8	15.7	19.6	11.8	11.8	27.5	2.0	3.9	51
1963	5.5	15.1	17.8	13.7	9.6	35.6	1.4	1.4	73	5.1	16.9	23.7	6.8	10.2	27.1	3.4	6.8	59
1964	6.9	19.8	14.9	12.9	11.9	30.7	1.0	2.0	101	5.6	16.9	27.0	5.6	13.5	22.5	6.7	2.2	89
1965	7.7	17.7	16.9	11.5	21.5	21.5	0.8	2.3	130	9.6	21.9	33.3	7.9	5.3	19.3	0.9	1.8	114
1966	7.9	15.9	20.6	7.1	19.8	23.8	0.8	4.0	126	4.7	27.1	35.7	5.4	10.1	14.0	1.6	1.6	129
1967	9.2	13.0	12.2	16.0	19.1	28.2	1.5	0.8	131	5.8	20.4	33.0	7.8	7.8	19.4	2.9	2.9	103
1968	9.1	17.4	15.9	16.7	12.9	22.7	1.5	3.8	132	13.8	28.5	30.8	3.1	12.3	6.9	3.1	1.5	130
1969	8.3	20.0	14.2	14.2	20.0	19.2	0.8	3.3	120	17.7	23.4	29.8	6.5	5.6	12.9	1.6	2.4	124
1970	12.7	29.7	14.4	11.0	14.4	15.3	1.7	0.8	118	18.0	27.9	23.8	6.6	9.8	7.4	3.3	3.3	122
1971	12.7	17.9	14.9	8.2	23.1	19.4	0.0	3.7	134	15.5	31.9	25.9	3.4	10.3	9.5	3.4	0.0	116
1972	9.4	28.1	8.3	12.5	20.8	18.8	1.0	1.0	96	11.1	40.0	23.3	1.1	13.3	8.9	0.0	2.2	90
1973	11.8	22.7	9.1	8.2	19.1	25.5	0.9	2.7	110	17.8	37.6	25.7	3.0	6.9	5.0	3.0	1.0	101
1974	10.3	22.4	18.7	6.5	22.4	15.9	1.9	1.9	107	3.6	43.2	31.5	3.6	4.5	8.1	1.8	3.6	111
1975	9.8	26.0	18.7	9.8	13.8	20.3	0.8	0.8	123	17.9	25.2	27.6	3.3	5.7	10.6	7.3	2.4	123
1976	12.6	23.3	15.5	5.8	11.7	27.2	1.0	2.9	103	17.4	27.8	24.3	6.1	4.3	7.0	10.4	2.6	115
1977	12.6	18.1	11.8	13.4	9.4	32.3	0.8	1.6	127	20.4	24.5	30.6	2.0	6.8	8.2	6.8	0.7	147
1978	13.8	19.1	15.8	5.3	13.2	28.9	1.3	2.6	152	19.8	25.1	32.9	3.6	2.4	7.2	7.8	1.2	167
1979	12.6	25.7	15.4	8.0	11.4	20.6	2.9	3.4	175	18.6	31.4	29.1	2.9	5.2	7.0	5.2	0.6	172
1980	19.4	20.6	10.3	9.1	12.7	21.8	3.0	3.0	165	16.0	31.3	25.7	0.7	5.6	6.3	13.2	1.4	144
1981	18.1	22.5	13.0	4.3	18.8	18.8	2.2	2.2	138	19.4	28.5	27.3	0.0	6.7	8.5	7.9	1.8	165
1982	15.8	23.0	12.9	7.2	19.4	15.1	2.2	4.3	139	17.1	30.9	27.6	0.0	4.6	8.6	8.6	2.6	152
1983	14.0	24.0	15.5	3.1	12.4	24.8	1.6	4.7	129	23.9	23.2	23.2	2.9	3.6	11.6	8.0	3.6	138
1984	17.2	23.0	14.8	3.3	11.5	20.5	5.7	4.1	122	25.0	27.9	22.1	1.5	9.6	5.1	8.1	0.7	136
1985	18.9	20.5	16.5	4.7	12.6	16.5	4.7	5.5	127	21.5	24.8	22.8	2.0	10.7	7.4	8.1	2.7	149
1986	18.6	23.9	12.4	2.7	10.6	28.3	1.8	1.8	113	21.7	24.3	27.8	0.9	5.2	3.5	13.0	3.5	115
1987	21.2	20.2	14.4	2.9	13.5	22.1	4.8	1.0	104	23.1	21.5	25.6	2.5	1.7	11.6	9.9	4.1	121
1988	16.5	14.7	11.9	3.7	15.6	24.8	6.4	6.4	109	20.0	34.4	23.2	1.6	3.2	6.4	8.8	2.4	125
1989	19.1	25.5	14.5	1.8	12.7	17.3	3.6	5.5	110	20.4	25.2	24.5	0.7	6.8	3.4	15.6	3.4	147
1990	16.5	23.7	9.3	0.0	23.7	21.6	3.1	2.1	97	19.3	22.8	28.9	0.0	6.1	12.3	8.8	1.8	114
1991	15.9	23.0	10.3	4.0	15.9	23.0	2.4	5.6	126	19.0	28.6	23.8	0.8	1.6	11.1	11.1	4.0	126
1992	20.4	20.4	14.8	2.8	14.8	18.5	3.7	4.6	108	21.6	21.6	31.5	2.7	4.5	4.5	10.8	2.7	111
1993	15.4	20.2	15.4	1.9	11.5	24.0	9.6	1.9	104	19.3	29.4	26.6	0.0	1.8	6.4	14.7	1.8	109
1994	22.1	18.9	16.8	5.3	13.7	17.9	3.2	2.1	95	15.9	27.0	27.8	1.6	0.8	7.9	17.5	1.6	126
1995	14.3	17.9	16.7	2.4	13.1	19.0	7.1	9.5	84	19.0	13.2	30.6	0.8	1.7	8.3	20.7	5.8	121
1996	14.3	18.2	13.0	2.6	7.8	23.4	14.3	6.5	77	21.2	19.5	19.5	0.8	1.7	10.2	23.7	3.4	118
1997	18.2	13.0	15.6	6.5	6.5	27.3	7.8	5.2	77	28.0	23.7	18.3	0.0	0.0	3.2	20.4	6.5	93
1998	18.3	29.6	4.2	2.8	5.6	23.9	7.0	8.5	71	18.7	19.8	22.0	2.2	1.1	5.5	27.5	3.3	91
1999	16.3	19.6	10.9	2.2	9.8	21.7	6.5	13.0	92	16.9	18.2	24.7	3.9	5.2	11.7	15.6	3.9	77
2000	24.7	13.0	5.2	1.3	10.4	16.9	20.8	7.8	77	21.5	15.2	15.2	0.0	0.0	11.4	29.1	7.6	79
2001	13.1	18.0	9.8	4.9	8.2	18.0	9.8	18.0	61	17.3	18.7	21.3	2.7	1.3	4.0	25.3	9.3	75
2002	13.3	15.0	16.7	0.0	18.3	18.3	8.3	10.0	60	20.3	20.3	16.5	1.3	1.3	3.8	29.1	7.6	79
2003	8.5	12.8	21.3	2.1	4.3	25.5	17.0	8.5	47	14.0	22.8	26.3	1.8	0.0	7.0	17.5	10.5	57
2004	20.0	12.0	4.0	4.0	20.0	18.0	16.0	6.0	50	29.9	17.9	14.9	0.0	3.0	6.0	20.9	7.5	67
2005	19.5	17.1	14.6	4.9	4.9	14.6	4.9	19.5	41	25.0	18.2	13.6	4.5	2.3	6.8	25.0	4.5	44
2006	27.3	13.6	9.1	2.3	20.5	13.6	6.8	6.8	44	24.0	14.0	14.0	0.0	2.0	8.0	36.0	2.0	50
2007	21.2	27.3	12.1	0.0	9.1	9.1	15.2	6.1	33	21.3	23.4	10.6	2.1	2.1	10.6	19.1	10.6	47
2008	0.0	16.7	16.7	11.1	38.9	5.6	0.0	11.1	18	21.4	11.9	14.3	2.4	7.1	11.9	26.2	4.8	42
2009	31.0	20.7	0.0	3.4	0.0	17.2	13.8	13.8	29	35.7	14.3	21.4	3.6	0.0	10.7	10.7	3.6	28
2010	11.4	22.9	11.4	0.0	14.3	11.4	20.0	8.6	35	18.5	25.9	11.1	0.0	3.7	3.7	33.3	3.7	27
2011	21.4	17.9	10.7	10.7	14.3	21.4	3.6	0.0	28	30.8	7.7	23.1	0.0	3.8	11.5	19.2	3.8	26
2012	22.7	13.6	18.2	4.5	13.6	9.1	9.1	9.1	22	19.4	16.7	11.1	0.0	0.0	5.6	33.3	13.9	36
2013	21.4	17.9	3.6	7.1	25.0	10.7	10.7	3.6	28	21.6	18.9	21.6	0.0	5.4	5.4	24.3	2.7	37
2014	38.9	16.7	0.0	0.0	0.0	11.1	22.2	11.1	18	20.0	26.7	20.0	6.7	0.0	3.3	20.0	3.3	30
2015	16.7	0.0	16.7	0.0	0.0	33.3	33.3	0.0	6	25.0	12.5	25.0	0.0	0.0	0.0	37.5	0.0	8

Table 5. Father's Occupation and Non-Regular Employment at Labor Market Entry

	Men								Women							
	1955-72		1973-82		1983-92		1993-2015		1955-72		1973-82		1983-92		1993-2015	
	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Professional or manager	1.2	172	2.8	179	5.3	151	14.4	202	7.5	159	14.6	164	11.6	190	24.6	264
Clerk or sales	4.9	184	4.2	189	6.1	212	21.5	284	3.8	160	11.2	223	13.4	239	25.0	332
Skilled worker	3.1	131	5.8	121	3.4	146	16.0	162	0.8	121	6.9	131	12.3	171	23.3	180
Semi- or non-skilled worker	1.2	165	4.1	197	8.2	220	19.5	164	3.9	154	7.2	194	10.1	208	31.5	222
Self-employed or farmer	3.6	917	4.5	539	12.5	296	17.2	227	7.3	727	8.4	533	14.9	342	30.7	267
Chi-square value	6.61		1.71		14.96		4.92		11.36		8.78		3.10		6.83	
df	4		4		4		4		4		4		4		4	
p	.158		.789		.005		.296		.023		.067		.541		.145	
N	1569		1225		1025		1039		1321		1245		1150		1265	
Cramer's V	.065		.037		.121 **		.069		.093 *		.084		.052		.073	

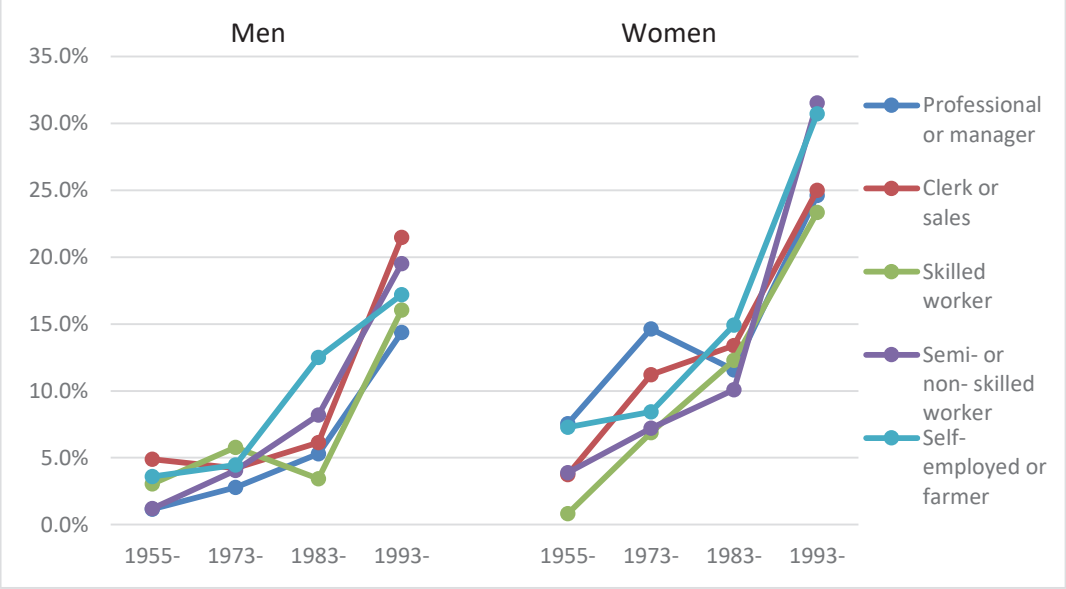

Figure 3. Father's Occupation and Non-Regular Employment at Labor Market Entry

Table 6. Father's Education and Non-Regular Employment at Labor Market Entry

	Men								Women							
	1955-72		1973-82		1983-92		1993-2015		1955-72		1973-82		1983-92		1993-2015	
	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Lower education	3.2	982	4.1	606	7.7	336	18.9	180	6.3	784	8.2	584	11.8	373	29.6	189
Middle education	1.7	291	4.2	355	8.4	451	17.4	523	4.8	248	9.8	377	12.8	500	26.9	700
Higher education	2.5	122	1.8	163	5.6	160	17.4	351	5.0	121	9.4	180	10.0	229	25.4	422
Chi-square value	1.77		2.05		1.30		0.23		0.87		0.78		1.14		1.22	
df	2		2		2		2		2		2		2		2	
p	.414		.359		.521		.891		.649		.676		.564		.543	
N	1395		1124		947		1054		1153		1141		1102		1311	
Cramer's V	.036		.043		.037		.015		.027		.026		.032		.031	

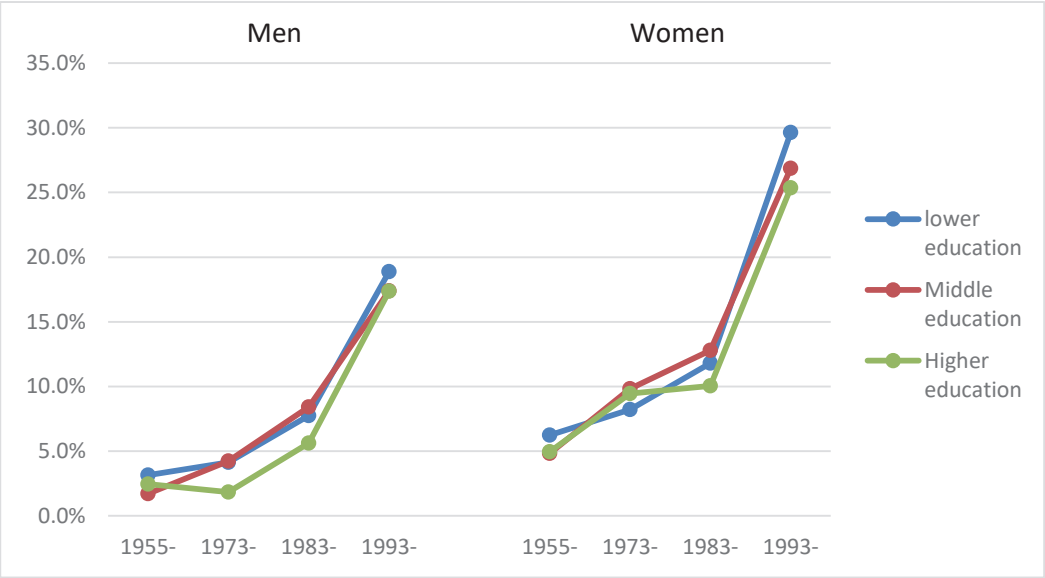

Table 4. Father's Education and Non-Regular Employment at Labor Market Entry

Table 7. Gender and Non-Regular Employment at Labor Market Entry

	1955-72		1973-82		1983-92		1993-2015	
	%	N	%	N	%	N	%	N
Men	3.2	1752	4.4	1339	7.9	1145	18.3	1197
Women	6.0	1476	9.1	1397	13.1	1282	27.9	1467
Chi-square value	14.38		23.68		16.87		33.61	
df	1		1		1		1	
p	.000		.000		.000		.000	
N	3228		2736		2427		2664	
Cramer's V	.067 **		.093 **		.083 **		.112 **	

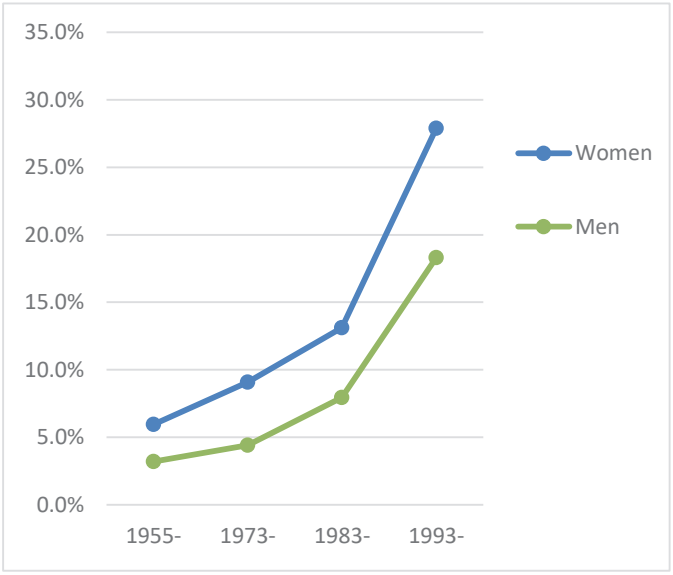

Figure 5. Gender and Non-Regular Employment at Labor Market Entry

Table 8. Education and Non-Regular Employment at Labor Market Entry

	Men								Women							
	1955-72		1973-82		1983-92		1993-2015		1955-72		1973-82		1983-92		1993-2015	
	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Junior high school	6.3	443	14.3	63	17.5	63	50.0	30	8.7	322	12.2	49	50.0	38	64.0	25
High school	2.2	864	4.2	665	9.1	493	20.7	363	3.3	747	6.4	747	11.1	561	34.4	427
Vocational school	4.1	98	6.5	92	7.8	128	13.6	206	8.0	261	12.2	197	12.9	232	25.0	252
Two-year college	0.0	29	8.2	49	12.5	24	24.1	29	12.0	100	11.6	267	11.7	256	26.7	311
University	1.6	318	2.6	470	5.0	437	16.5	569	4.3	46	13.1	137	13.8	195	22.1	452
Chi-square value	20.67		21.11		14.48		26.44		22.14		14.06		48.04		34.03	
df	4		4		4		4		4		4		4		4	
p	.000		.000		.006		.000		.000		.007		.000		.000	
N	1752		1339		1145		1197		1476		1397		1282		1467	
Cramer's V	.109		.126		.112		.149		.122		.100		.194		.152	

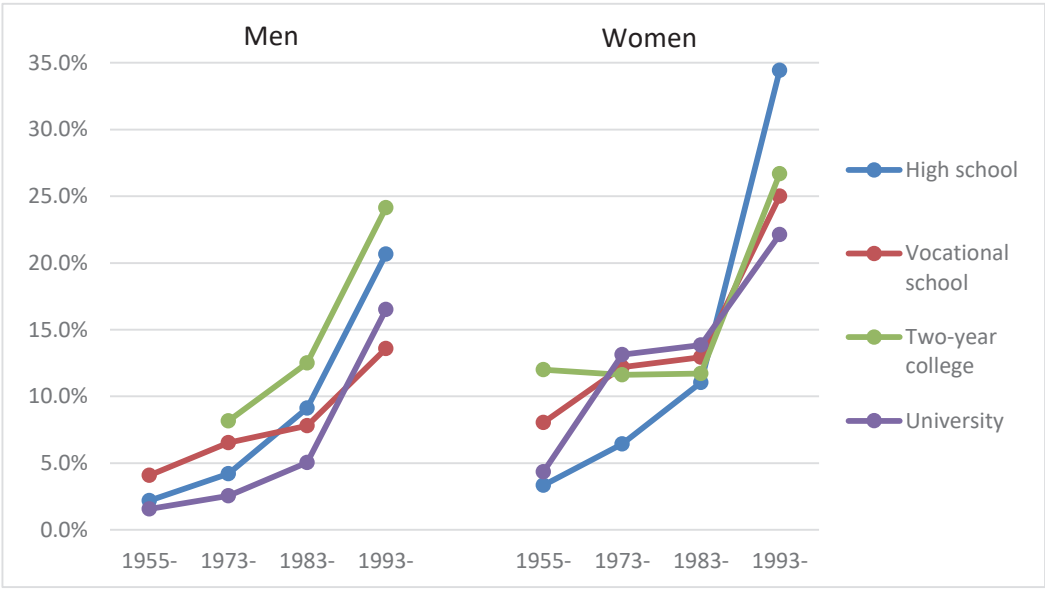

Figure 6. Education and Non-Regular Employment at Labor Market Entry

I consider how the gender gap of obtaining non-regular employment at labor market entry has changed over time. Table 7 and Figure 5 show that in any cohort, women are more likely to obtain non-regular employment. Although the rate has increased over time, the gender gap has not changed over time. I can say that the tendency that women are more likely to obtain non-regular employment has been stable while non-regular employment has been expanding in the Japanese youth labor market.

Finally, I consider how educational differences have changed over time. As Table 8 and Figure 6 indicate, for men, the rate of high school graduates is higher than that of university graduates. The tendency has not changed largely over time. However, for women, the educational difference has changed significantly. In 1973-82, the rate of high

school graduates was lower than that of university graduates. In 1983-92, the educational difference disappeared, and since 1993, the rate of high school graduates has sharply increased to reach approximately 35%.

3.3 Multivariate Analysis

So far, I examined the relationship between two variables at each cohort. In this subsection, I examine whether the differences between social class, gender, and education have changed over time after controlling for other factors. I conduct a logistic regression analysis using several models, where the dependent variable is a possibility of obtaining non-regular employment at labor market entry. I compare the base model with the interaction models. For men, I merged two-year college and vocational school into one category[4].

Table 9 gives the results of fitting several models. At the above results for men and the middle results for women, Model 1 is the base model, which includes only the main effects. At Model 2 – Model 4, I add the interaction effects between cohort and the main effects to Model 1. I examine whether their interaction models fit the data better than the base model (Mode 1), and which interaction model fits the data best. As Table 9 shows, for men, the reductions of the deviances are not significant at any interaction models, which indicates that the base model fits the data best. I may say that the differences of non-regular employment between father's occupations, father's educations, and respondent's educations have not increased over time.

In contrast, as the result for women in Table 9 shows, the interaction effects at Model 2 and Model 4 are significant for women, which indicates the differences between father's occupations and that between respondent's educations have changed over time. When I compare AIC and BIC at Model 3 with those at Model 4, I notice that Model 4 fits the data better than Model 3. I also consider the question of whether the model that includes these two interactions fits the data better than Model 4. To check this, at Model 5, I add the interaction effect between father's occupation and cohort to Model 4. The results show that compared to Model 4, the values of AIC and BIC are higher at Model 5 although the reduction of the deviance is significant at the 5% level. I conclude that Model 4 fits the data best, which indicates the educational difference of obtaining non-regular employment has increased over time for women.

[4] That is because the number of men in two-year colleges is very small, which makes it difficult to estimate properly with logistic regression analysis.

Next, I confirm whether gender differences have changed over time. I conduct an analysis by merging men and women into the same data. At Model 1, the independent variables are cohort, gender, father's occupation, father's education, and unemployment. At Model 2, I add the interaction effect between cohort and gender. As the bottom part of Table 9 shows, Model 2 does not fit the data better than Model 1. The result indicates the gender difference, in which women are more likely to obtain non-regular employment, has not changed over time.

Table 9. Fit of Models

		Deviance	⊿df	⊿deviance	p	AIC	BIC	Number of parameter	N
Men									
Model 1	Base (cohort, father's occupation, father's education, education, unemployment rate)	1982.1				2010.1	2032.8	14	4182
Model 2	Base + farther's occupation × cohort	1968.4	12	13.70	.3205	2014.6	2062.6	26	4182
Model 3	Base + farther's education × cohort	1976.0	6	6.16	.4060	2016.0	2048.4	20	4182
Model 4	Base + education × cohort	1968.6	9	13.53	.1402	2020.4	2051.9	23	4182
Women									
Model 1	Base (cohort, father's occupation, father's education, education, unemployment rate)	3210.6				3240.6	3265.1	15	4319
Model 2	Base + farther's occupation × cohort	3181.1	12	29.53	.0033	3235.1	3279.3	27	4319
Model 3	Base + farther's education × cohort	3207.5	6	3.05	.8025	3249.5	3283.8	21	4319
Model 4	Base + education × cohort	3164.6	12	45.96	.0000	3218.6	3262.8	27	4319
Model 5	Model 4 + father's education × cohort	3142.7	12	21.94	.0382	3220.7	3284.5	39	4319
Men and women									
Model 1	Base (cohort, gender, father's occupation, father's education, education, unemployment)	5206.9				5238.9	5269.8	16	8501
Model 2	Base + gender × cohort	5201.5	3	5.36	.1473	5239.5	5276.2	19	8501

I examine at the results of the models that fit the data best. Table 10 shows Model 1 for men, and Mode 1 and Model 4 for women. As seen in Table 10, father's occupation has significant effect for both men and women, but I cannot confirm a significant difference between professional and semi- or non-skilled workers. I can say that there is little difference between the father's occupations. The effects of the father's education are not statistically significant. I cannot confirm that youth whose social class is lower tend to obtain non-regular employment at labor market entry. Unemployment rates are significant and positive, which indicates that youth who get their first job in a time of depression are more likely to obtain non-regular employment at labor market entry.

Table 10. Logistic Regression Analysis of Non-Regular Employment at Labor Market Entry

	Men			Women					
	Model 1			Model 1			Model 4		
	Coef.	s.e	Odds	Coef.	s.e	Odds	Coef.	s.e	Odds
Intercept	-2.961	.366	.05 **	-2.691	.238	.07 **	-2.382	.288	.09 **
Father's occupation									
Professional or Manager (ref)									
Clerk or sales	.503	.220	1.65 *	-.129	.148	.88	-.111	.149	.90
Skilled worker	.152	.267	1.16	-.465	.188	.63 *	-.477	.190	.62 *
Semi- or non-skilled worker	.286	.254	1.33	-.226	.173	.80	-.257	.175	.77
Self-employed or farmer	.495	.223	1.64 *	.019	.148	1.02	.039	.148	1.04
Father's education									
Lower education	-.101	.205	.90	.165	.154	1.18	.198	.154	1.22
Middle education	-.072	.174	.93	.193	.127	1.21	.183	.127	1.20
Higher education (ref)									
Unemployment rate	.302	.084	1.35 **	.219	.064	1.24 **	.236	.065	1.27 **
Education									
Junior high school	1.365	.247	3.92 **	.918	.245	2.51 **	1.312	.537	3.71 *
High school	.266	.156	1.31 +	.112	.143	1.12	-.254	.270	.78
Vocational school	.200	.190	1.22	.092	.157	1.10	-.610	.343	.54 +
Two-year college				.302	.145	1.35 *	-.212	.300	.81
University (ref)									
Labor Market Entry Cohort									
1955-1972	-1.206	.246	.30 **	-.800	.188	.45 **	-1.718	1.038	.18 +
1973-1982	-.639	.213	.53 **	-.242	.149	.78	-.109	.353	.90
1983-1992 (ref)									
1993-2015	.542	.204	1.72 **	.715	.148	2.04 **	.168	.269	1.18
Interaction effect									
55-72 × junior high							-.088	1.175	.92
55-72 × high school							.604	1.072	1.83
55-72 × vocational							1.744	1.102	5.72
55-72 × two-year college							1.961	1.104	7.11 +
73-82 × junior high							-1.424	.858	.24 +
73-82 × high school							-.538	.424	.58
73-82 × vocational							.614	.500	1.85
73-82 × two-year college							.234	.455	1.26
93-15 × junior high							.512	.767	1.67
93-15 × high school							.887	.318	2.43 **
93-15 × vocational							.722	.396	2.06 +
93-15 × two-year college							.546	.355	1.73
Paseudo R^2 (Cox & Snell)		.055			.060			.070	
N		4182			4319			4319	

** p<.01 * p<.05 + p<.10

We examine the educational effect. For men, junior high school has a significant effect, but high schools are not significant at the 5% level, which means there are not large differences between high school and university for men. For women, at Model 4, the main effect of high school is not significant and the interaction effect between high school and the 1993-2015 cohort is .887 and statistically significant, which indicates the

tendency that high-school-educated women are more likely than college-educated women to obtain non-regular employment has emerged since 1993. In addition, a comparison of cohort effects in Model 1 and Model 4 for women shows that after I add the interaction effect, the coefficient of the cohort that is significant at Model 1 becomes no longer significant at the 5% level in Model 4. This means that the expansion of non-regular employment since about the mid-1990s arose not for all women but for lower-educated women.

4. Discussion

In Japan, until the 1980s, the transition from school-to-work was smooth and stable for Japanese youth. However, since about the mid-1990s, non-regular employment has been increasing, and more and more youth are starting their career as non-regular employees. In this paper, I explored whose risk of obtaining non-regular employment at labor market entry has increased in Japan by focusing on social class, education, and gender.

As a result, it became clear that for lower-educated women, the risk of non-regular employment in the labor market has increased since about the mid-1990s. The results show that there are not large differences between the father's social class, and they have not changed over time. For gender, I confirm the tendency that women are more likely to obtain non-regular employment than men, and this has not changed over time. Concerning education, I assumed that lower-educated people were more likely to obtain non-regular employment. However, for men, there is not a large difference between high-school-educated people and university-educated people, and it has not changed over time. In contrast, for women, lower-educated people increased their risk of obtaining non-regular employment, and the educational gap has enlarged over time.

I consider why the risk of non-regular employment in the labor market has increased for high-school-educated woman. First, one of my interpretations is the reduction of clerical jobs in the 1990s for high-school-educated women. Until the 1980s, the number of new openings for regular and clerical jobs was high, and they were the main place of employment for high-school-educated women. However, the number of these jobs has dramatically decreased (Takanashi 2002). I may say that these changes led to the increasing risk for high-school-educated women. In contrast, for high-school-educated men, they continued to go into regular and blue-collar jobs, which is considered to be one of the reasons why lower-educated men did not increase their risk over time.

Second, I may interpret the results from the improvement of the employment situation for university-educated women. Until the 1980s, employment in a private company was very severe for university-educated women due to gender discrimination. The School Basic Survey reveals that in 1975, for university-educated women, the rate of no job after graduating school was 23.5% compared to 7.6% for university-educated men. In this paper, I also find the tendency that the rate of non-regular employment was higher for university-educated women in the 1970s or the 1980s. However, the employment situation has relatively improved due to several social changes such as the introduction of gender equality polities and the replacement of high-school graduates with university graduates by employers. I assume that these changes enable university-educated women to obtain regular and white-collar employment, which prevented high school graduates from obtaining regular employment.

Needless to say, these are interpretations, so I need to examine them empirically in the future. Although two interpretations I discussed focus on the demand side, I also need to think about the supply side, such as the quality of high school graduates, gender attitudes, or the reduction of high school graduates. In addition, our results raise various important questions of how the expanding non-regular employment at first jobs affects a person's subsequent career. These issues should be studied further. Despite these remaining tasks, this study clearly revealed whose risk of non-regular employment at labor market entry has increased since about the mid-1990s. I hope that our findings will contribute to a better understanding of social inequalities for Japanese youth in the era of globalization.

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