Income Structures of Self-employment in Professional Occupations

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Abstract

The purpose of this study is to explore the effects of personal income by employment status in Japanese professional occupations. Since the 1990s, it has been asserted that self-employment has developed into a more heterogeneous employment type with increases prevalent in professional-managerial and unskilled occupations, but declines in traditional forms of petty bourgeois and skilled self-employment. Previous research has shown that self-employed income had been deteriorating compared to those of employed through 1990s. However, very few studies examine individual income of recent self-employment. Therefore, we need research to discover the relationship between employment status and personal income. Using Japanese General Social Surveys (JGSS2000-2012), we conduct the analysis using variance function regression and clarify three main results: (1) average income of self-employment is relatively lower compared to those of full-time employment and the variance within self-employment is larger; (2) especially, the features are outstanding in self-employment with employees; (3) on the other hand, solo self-employment income is lower than those of full-time employment but the income is getting higher as they get older like full-time employment. These results demonstrate that professional self-employment in the 2000s is not always disadvantage compared to full-time employment. This means that professional self-employment has a possibility to put a brake on the decreasing number of self-employment in Japan. Therefore, we need further research to clarify the more detail within professional self-employment.

1. Introduction

This paper aims to clarify the impact of employment status on income in professional and technical occupations in Japan, focusing in particular on the differences between self-employment and regular employment, as well as income gaps within the groups. The paper discusses the importance of investigating the income structure of self-employment from the perspectives of the relationship between self-employment and employment in the labor markets, and the trends in the occupational composition of self-employment.

Unemployment rates in Japanese labor markets have risen since the late 1990s, suggesting an increase in the number of the long-term unemployed (The Japan Institute for Labour Policy and Training, 2001). Meanwhile, the increase in irregular employment shows the working style of long-term employment is no longer the obvious path (Nitta 2003). These narratives would imply that Japan is moving from an era when company provided guarantees to the individual, to one where the individual bears their own risk. Based on this historical background, how self-employment (one of the working style choices that is not regular employment) will continue is an important issue in terms of sustaining peoples' employment opportunities.

Moreover, as Japanese society continues to age and decline there have been growing expectations that self-employment will expand employment opportunities for older people, and there has been a rising interest within the fields of economics and sociology concerning the self-employed (e.g. Mitani 2002; Genda 2002; Jeong 2002; Naka 2018). However, to the contrary of these expectations, self-employment has been declining in Japan since the late 1980s (with self-employment in the agricultural industry falling since before then). While other countries have seen repeated rises and falls in self-employment, Japan is one of the exceptions for the consistent decline in its self-employment levels (OECD 2000). The question of why self-employment in Japan is decreasing in comparison to other countries is becoming a major topic of research (Kambayashi 2017).

However, there is no straightforward solution for this topic of research due to the number of factors involved. It must be disassembled into several aspects, one of which is the "revival" in self-employment. With all the attention going to the phenomenon of decline in self-employment, there have been very few studies conducted into the revival in self-employment that has been taking place alongside – that is, the rise of self-employment among professional and technical occupations (henceforth self-employed professionals). In researching self-employment in Japan, one needs to understand both aspects of decline and revival.

The increase in Japan of self-employed professionals began following the beginning of the 1990s, particularly within professional services such as the law, accountancy, patent attorney work, architecture, design, consultancy and medical care (Yahata 1998). It has been argued that the rise in recent years of professionals among the self-employed has unleashed changes within its occupational composition (Jeong 2002; Naka 2018).

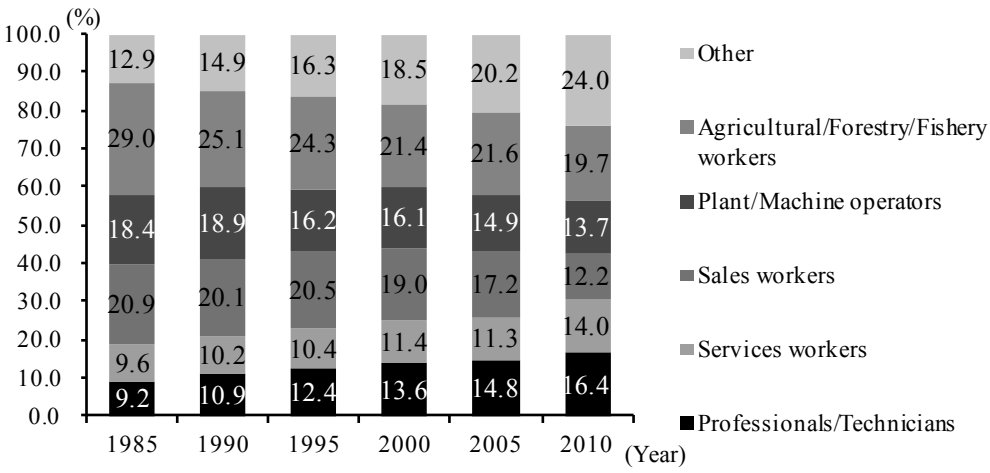

Figure 1. Trends of Occupational Composition in Japanese Self-employed
Source: National Census

In fact, self-employed professionals in the 2000s have become increasingly impossible to ignore. Figure 1 shows changes in the occupational composition rates of self-employed people.[1] It shows that while professionals made up 9.2% of the self-employed in 1985, this figure rose to 16.4% by 2010. This percentage is greater than for occupations that traditionally involve self-employment, such as sales (12.2%) and production processes (13.7%). However, it should be noted that while the percentage and real number of self-employed professionals increased, the absolute number of self-employed people as a whole decreased between 1985 and 2010 (Ministry of Internal Affairs and Communications Labour Force Survey: from 9.16 million to 5.82 million people).

It has been argued that behind the decrease in self-employment in Japan lies the fact that the income of self-employed people is lower than people in regular employment (Genda 2002, 2003). According to Genda (2003), the lack of income growth as those in self-employment age is one of the reasons acting as a deterrence against self-employment. So, why is the number of self-employed professionals not dropping? Rather, the possibility exists that the income of self-employed professionals, who are increasing in number, is not disadvantageous in comparison to the incomes of those in regular employment. However, hardly any studies exist that deal quantitatively with the incomes of self-

employed professionals. Moreover, it is not obvious whether the incomes of those in self-employment would be lower than regular employment incomes given that the productivity of professionals is anticipated to be higher than in other occupations. In particular, there is significant room for an investigation of the income structures within the professional occupations that had distinctive levels of self-employment in the 2000s.

As such, this article will examine whether the incomes of self-employed professionals is disadvantageous in comparison to the incomes of the employed using national-scale social survey data from the 2000s. Describing and understanding the income structures of the increasing numbers of self-employed professionals will serve as an aid in approaching the following question of why self-employment is declining in Japan. In the paper, Chapter 2 considers previous findings on the occupational composition and incomes of the self-employed and suggests topics of research that remain to be explored. Chapter 3 explains the data and variables used, while Chapter 4 gives the results of the analysis. Chapter 5 summarizes and discusses the analysis results.

2. Previous research

2.1 Trends in the occupational composition of the self-employed

Since the 1980s, there has been a surge of self-employment in non-skilled occupations, professional occupations and other semi-professional occupations in addition to occupations that have traditionally involved self-employment such as skilled occupations and sales (Mueller and Arum 2004). It is believed that behind this shift in the occupational composition of the self-employed lies institutional changes in the globalization of the economy and in labor markets. The reduction in long-term employment relationships and the rise in short-term, complex employment relationships which can be seen in many countries in particular is argued to be giving rise to low-skilled self-employment (sub-contracting and outsourcing), pseudo self-employment (self-employment within professional jobs in the construction and manufacturing industries) and professional self-employment (individuals working exclusively as freelancers) (Hakim 1998).

In fact, comparative studies of self-employment in industrialized countries suggest that in the UK, the USA and Germany, there is a greater proportion of people in professional occupations in self-employment than there are skilled and non-skilled occupations (Arum and Mueller 2004). In contrast, one of the characteristics of self-employment in Japan is that there is a greater proportion of people in skilled occupations and sales, with a low proportion in professional occupations compared to other countries (Ishida 2004).[2] However, the data used in these analyses only goes up to the 1990s, so it is

therefore necessary to consider the rise of the professionals that came after this point if one is to get to grips with Japan's self-employed as laid out in the previous chapter.

It is possible that the professionalization of the self-employed in other countries is now taking place at a later date in Japan. Given the major changes that have taken place in the occupational composition of the self-employed over the last twenty years, we need to take a look at what is actually going on. Moreover, comparison with the findings from other countries could help to gain greater understanding of the ways in which the phenomenon that has occurred in self-employment in Japan is similar to those in such countries or unique.

It has been suggested that the occupational composition of self-employment is going through a structural change (Yahata 1998). Yahata used labor force surveys from 1975 to 1995 to demonstrate that professional and technical occupations (henceforth professional occupations) have risen by around 70% against the 1975 standard. The professions mentioned in the labor force surveys that were used in the study include the law, accountancy, patent attorney work, veterinary work, architecture, design, instruction, consultancy, medical care, hygiene, waste disposal and education.

Meanwhile, the proportion within self-employment of people working in sales or production processes has fallen as the rate of those in professional occupations has increased (Figure 1). In particular, the repeal of the Large-Scale Retail Store Law in June 2000 – which had helped to protect self-employment directly to do with sales – made it difficult for people self-employed in sales to carry on working as they were (Jeong 2002; Arata 2012). In other words, there has been an ongoing phase of transition in the occupational composition of self-employment since the 2000s. However, the reality of the rise in the number of self-employed professionals has been ignored.

2.2 The incomes of the self-employed

Income is one of the most important indicators of actual class status (Jeong 2002). It is an absolutely essential indicator to understand the living standards and lifestyles of both the self- and regularly employed. However, researchers have suggested several areas in which it is difficult to understand the income of the self-employed accurately when compared to people in regular employment.

In addition to the fact that self-employed people tend to state lower incomes in matters relating to taxation, there is also no clear delineation of household finances and income (Jeong 2002). The difficulty of understanding what someone's income is inevitable given the nature of self-employment. Despite such limitations, multiple studies have been carried out. The principal findings are listed below.

In comparison to workers employed by companies (the core of the industrial society), self-employed people are recognized as a "marginal" existence, having lower incomes and operating on an

extremely fragile foundation (Bechhofer and Elliot 1976). In fact, findings from a study comparing OECD countries suggest that not only do self-employed people have lower incomes, but that they also are required to work long hours (OECD 2000). In Japan, a study has shown how long working hours and low incomes have become the norm, especially in agricultural self-employment (Hashimoto 1999). The findings from these studies suggest that self-employed people are a marginal existence in the sense that there is little room for them to increase their income because of their low levels of means of production.

However, studies dealing quantitively with the incomes of self-employed people in Japan have suggested different findings, with the first half of the 1990s as the turning point. From the 1950s to the 1980s, the incomes of self-employed people were found to be generally higher than people in regular employment (Tachibanaki 1994; Jeong 2002). However, a reverse phenomenon occurred from the beginning of the 1990s, with the incomes of the regularly employed exceeding those of the self-employed (Jeong 2002).

It is clear that the relative drop in the incomes of self-employed people in comparison to the regularly employed is something that occurred throughout the 1990s (Genda 2003). It is believed that the background factors depressing the incomes of self-employed people were the loss of urban predominance, stagnation in age-related income growth, and falls in the incomes of entrepreneurs who employ others (Genda 2002, 2003). In other words, the income gap between the two groups of self-employed and regularly employed was on an upwards trend. In particular, whether or not those who were self-employed had their own employees or not (which is to say, whether or not they were using labor force other than their own) was something splitting the group into two parts.

Meanwhile, the variance of incomes among the self-employed has been shown to be far, far greater than among regular employees (Jeong 2002). Previous studies have pointed out how high earners and low earners are lumped together – one of the features of the self-employed in Japan (Tachibanaki 1994). A recent study that directly measured internal variance within self-employment suggested a similar trend (Ogawa 2016). However, the income gap within self-employment was on a downward trend between 1995 and 2005, and studies have suggested that the size of the gap is close to that of irregular employment (Takikawa 2013).

Furthermore, there are studies which have used the same sort of data as that used in this paper to analyze the incomes of the self-employed (Nishimura 2002, 2003).[3] According to Nishimura (2002), the data suggest a serious gender-based income gap. He also confirms that education level has little impact on self-employed incomes. However, because the data used for this analysis looks at the two points in time of 2000 and 2001, due attention must be paid to the professional occupations that

characterize self-employment in the 2000s. In addition, Nishimura says that the modern self-employed "could form a modern market that is free from the primary pre-modern factor of succession" (Nishimura 2003: 70). To elaborate on this point, it is worth examining professional occupations, where the extent of a person's ability is thought to directly affect their income, as a possible way to "form a modern market."

2.3 Research questions

As discussed in Chapter 2.1, the presence of professionals is one of the characteristics of the modern self-employed class (Naka 2018). This trend started to become obvious in Japan from the latter half of the 1990s. However, domestic studies of incomes within self-employment have largely neglected to consider the self-employment incomes for professional occupations during the 2000s. In other words, the extent to which incomes of self-employed people who work in professional occupations differ to other employment statuses (regular employees and people in irregular employment) is a topic of research that has yet to be solved.

As such, this paper will empirically examine whether the incomes of self-employed people working in professional occupations is disadvantageous in comparison to the incomes of people in regular employment, while also considering the gaps between and within the two groups. More specifically, the paper will clarify whether the internal variance of incomes within self-employment is greater than within regular employment, and whether the incomes of people in self-employment fail to increase as the person ages.

3. Research method

The data used in the analysis is taken from Japanese General Social Surveys (henceforth JGSS) carried out between 2000 and 2012. These surveys were conducted among men and women between the ages of 20-89 resident across Japan. There were a total of 32,446 valid responses for 2000, 2001, 2002, 2003, 2005, 2006, 2008, 2010 and 2012 combined. After limiting these responses to participants whose current work was in a professional or technical occupation, there remained 2,203 responses without any missing values for necessary variables.

The analysis was carried out without differentiating by gender. While it would have been interesting to carry out an analysis by gender to see the according deviations in type of profession, it was feared that estimations would become unstable due to the small sample size. Therefore, it was decided to conduct the analysis in a form that controlled for gender as the second-best option.

In this paper, a "self-employed person" is operationally defined based on analytical definitions from social class research as someone whose employment status is that of "manager/executive" or "self-employed proprietor/liberal professional" who moreover has between 1-29 employees. Based on findings from existing research, they are further defined into "self-employed people with employees" and "self-employed people without employees" according to whether they have employees. Meanwhile, the types of employment of regular employees and those in irregular employment (the comparison references) were taken to be "a general employee in regular employment," "casual employee (part-time job)," "temporary employee," "contract employee" and "fixed-term employee."

The JGSS data is one of the few sets of data that is both a national-scale social survey and was conducted continuously throughout the 2000s. While it would be hard to adequately capture the self-employed with data from only one point in time, the consolidation of data sets from nine different points in time reconfigures "the incomes of the modern self-employed professional" into something that can be quantitatively understood.

The dependent variable is the logarithmic values of individual incomes. Specifically, annual incomes (including tax) for the year previous to the survey were queried for 19 categories. Median values were then taken for each category and turned into continuous variables for use. The average values (standard deviation) were 5.24 (1.10) for self-employed people with employees and 6.15 (0.18) for self-employed people without employees, whereas it was 6.09 (0.57) for regular employees and 4.69 (0.80) for people in irregular employment.[4]

The explanatory variable is employment status. These are the previously discussed statuses, namely regular employees, people in irregular employment, self-employed people with employees and self-employed people without employees.

The following variables were used as control variables: year of survey, age (20s, 30s, 40s, 50s), gender, educational background (junior high/high school graduate, junior college/technical college graduate, university/graduate school graduate), marital status (married and not married) and hours spent working per week. The industries were secondary industries (construction & manufacturing industries) and tertiary industries (wholesale, retail, food & beverages and service industries). Table 1 shows the descriptive statistics of variables used in the analysis.

Table 1. Descriptive statistics of variables (N=2,203)

Variable	%	Variable	%
Survey year		Gender	
2000	9.0	Male	45.8
2001	7.9	Female	54.2
2002	8.7	Education	
2003	8.7	Junior/High	23.8
2005	6.3	College/Vocational	26.6
2006	14.0	University	49.6
2008	13.6	Industry	
2010	15.6	Secondary sector	14.5
2012	16.3	Tertiary sector	85.5
Age		Employment Status	
20s	18.7	Full-time	71.8
30s	27.1	Part-time	16.6
40s	30.8	Self-employed with employees	5.8
50s	23.4	Self-employed with no employees	5.8
Spouse		Variable (Mean/S.D)	
No	30.4	Logged Income	5.81(0.86)
Yes	69.6	Working hours	41.67(14.91)

Table 2. Main professional occupations

	Full-time employment	Part-time employment	Self-employed with employees	Self-employed with no employees
Engineering	13.3	1.9	3.9	2.3
Architects	4.7	0.8	8.6	15.6
Information	11.3	3.0	7.8	5.5
Doctor	0.8	0.3	0.0	6.3
Medical and Pharmaceutical	1.6	2.7	0.0	4.7
Nursing	15.7	19.2	0.0	0.8
Licensed masseur	0.3	1.1	7.0	9.4
Other Health	11.1	17.5	1.6	3.9
Primary School Teaches	7.8	1.4	0.0	0.0
Secondary Education Teachers	4.0	1.9	0.0	0.0
Religious	0.0	0.0	1.6	3.9
Press	0.5	1.1	4.7	1.6
Artists	0.0	0.3	1.6	3.9
Designer	1.3	0.3	4.7	7.0
Nursery	5.8	15.6	0.0	0.0
Social Workers	2.8	3.8	0.0	1.6
Private Teachers	1.6	16.4	45.3	15.6
Business consultant	0.6	0.0	3.1	4.7
Sample Size	1,582	365	128	128

In addition, Table 2 shows the main composition of occupations for each employment status. It shows that professional composition differs depending on employment status. For example, there was a remarkably higher percentage of instructors among self-employed people with employees, followed by people working in construction/civil engineering, information technology engineers and

massage/acupuncture/moxibustion therapists.[5] In contrast to those with employees, there was a greater diversity of occupations among those without employees. Meanwhile, there was a high percentage of nurses, mechanical/electrical/chemical engineers, information technology engineers, other healthcare workers and school educators among the regular employees. The analysis method uses variance function regression (Western and Bloome 2009). This method constructs a model for both the variance between the dependent variable groups (β) as well as the variance within the groups (λ) which is not accordingly explained, providing estimates simultaneously. This method is suitable because the incomes of self-employed people have been shown to have wide internal variance (e.g. Tachibanaki 1994; Jeong 2002; Takikawa 2013; Ogawa 2016). In particular, this method makes it possible to understand directly the variance occurring within a group even when the same observed skills (in this paper, these are professional and technical skills) have been acquired.

4. Results

Estimates were made using variance function regression with logarithmically converted individual incomes as the dependent variable. Table 3 shows the results of those estimates. The estimated values for between groups (β) are equivalent to interpretations from a regression analysis using the least squares method. For example, looking at the estimated value for gender between individual income groups makes it possible to confirm a significant positive value for the coefficient. This shows that being male results in higher income in comparison to being female. In addition, the coefficient of determination was 60.7%. This is the variance between groups explained by the explanatory variables, suggesting that approximately 40% of variance across the dependent variable as a whole is not explained as variance within groups.

Meanwhile, the estimated values for within groups (λ) signify the size of variance remaining within groups. For example, the estimated value for gender within individual income groups is a significant negative value at the 0.1% level. This result leads to the interpretation that variance within the group is around 28.1% lower for men than women (1-exp(-0.330)).

Let us consider the estimated values for the explanatory variable of employment status. The average income for those in irregular employment (part-time work, temporary employment etc.) is 59.0% lower (1-exp(-0.891)) than for people in regular employment. In addition, it is understood from the estimated value for coefficient λ that variance within the group was 104.1% larger (exp(0.714)-1). Moreover, the average income of people in self-employment with employees is 52.3% (1-exp(-0.714)) lower than for those in regular employment, and internal variance is 252.6% larger (exp(1.260)-1).

The coefficients (β) for those in irregular employment and self-employed people with employees have relatively similar values. However, the results from a Wald test-based investigation of the uniformity of the coefficients dismissed the uniformity of the coefficients (x^2=7.0, df=1, p=0.008), and so it can be judged that the two have differing impacts on income. Meanwhile, the average value for people in self-employment without employees was 17.1% (1-exp(-0.187)) lower than for those in regular employment. The internal variance for the group was 179.8% larger (exp(1.029)-1). The finding of large income gaps within the self-employed is consistent with findings from studies into all self-employment (including professional occupations) (Takikawa 2013; Ogawa 2016). However, it has been suggested that the size of such variances varies greatly depending on whether the self-employed have employees or not.

Table3. Results of logged individual income

	Between (β)		Within (λ)	
	Coef.	S.E.	Coef.	S.E.
Intercept	4.776 ***	0.075	-0.877 ***	0.249
Survey year (ref.2000)				
2001	-0.062	0.056	0.149	0.187
2002	0.027	0.055	0.060	0.183
2003	-0.070	0.055	0.080	0.183
2005	-0.016	0.060	0.121	0.200
2006	-0.122 *	0.049	0.124	0.165
2008	-0.073	0.049	0.204	0.165
2010	-0.118 *	0.048	0.389 *	0.161
2012	-0.157 **	0.048	-0.003	0.160
Age (ref. 20s)				
30s	0.310 ***	0.037	-0.219 †	0.123
40s	0.530 ***	0.038	-0.224 †	0.126
50s	0.610 ***	0.041	-0.092	0.137
Gender (ref.female)				
Male	0.334 ***	0.028	-0.330 ***	0.095
Education (ref. Junior/High school)				
College/Vocational	0.058 †	0.033	-0.162	0.109
University	0.237 ***	0.030	-0.292 **	0.099
Marital Status (ref. No spouse)				
Spouse	0.065 *	0.029	-0.199 *	0.097
Working hours	0.016 ***	0.001	-0.008 *	0.003
Industry (ref. Secondry sector)				
Tertiary sector	-0.081 *	0.036	0.029	0.119
Employment status (ref. Full-time employment)				
Part-time employment	-0.891 ***	0.037	0.714 ***	0.124
Self-employed with employees	-0.741 ***	0.052	1.260 ***	0.172
Self-employed with no employees	-0.187 ***	0.051	1.029 ***	0.170
Adj. R^2	0.607			
N	2,203			

Note: *** : p<0.001, ** : p<0.01, * : p<0.05, † : p<0.1.

The analysis above gave estimate values for the average variance gaps within the groups after having controlled for various explanatory variables. However, since these values are residual variances once control variables are added, they depend on which values are controlled (Ogawa 2016: 46). For this reason, attention is paid to changes in the estimate values for between groups and within groups when variables are controlled for in stages with the focus on employment status.

Figure 2 shows changes in the respective estimated values. The y-axis in the graph represents coefficient values, while the x-axis represents each of the following models. Model 1 is without control variables, Model 2 is with year of survey, age and gender included. The Model4 to 6 are the following variables added to Model3. Model 4 includes educational background, Model 5 industry, and Model 6 working hours.

Figure 2 shows that even when control variables are gradually introduced throughout Models 1 to 6, the inter-group gaps between people in self-employment with employees and those in regular employment do not change significantly. However, there is a slight reduction in the gap when working hours are accounted for (From -0.937 in Model 5 to -0.741 in Model 6). In contrast, the internal group coefficients grow slowly bigger as more control variables are added, but falls when working hours are included (from 1.696 in Model 5 to 1.260 in Model 6).

The internal estimated value for self-employed people without employees is slightly positive without the controls but turns negative when the control variables are introduced. However, the value shows no significant change even when controls are introduced by stages. Moreover, it is possible to confirm that the gap between this group and those in regular employment is relatively small when compared to the values for self-employed people with employees and those in irregular employment. In terms of the internal gap, there is a slight growth when the control variables are added and a small drop when the working hours variable is introduced (from 1.121 in Model 5 to 1.029 in Model 6), as in the case of self-employed people with employees. However, that change is small when compared to that of self-employed people with employees.

A similar method was then used to understand the impact of age on individual incomes more clearly, with estimates carried out for the models in Table 3 with the addition of an interaction term between employment status and age. Because there was basically no change seen from age on internal variances, only the inter-group estimate results are given (Table 4). Moreover, because the main results have basically the same values as in Table 3, only the coefficients necessary in the examination of the effects of age have been extracted and presented. Furthermore, the predicted values of individual incomes from the coefficients in Table 4 are shown in Figure 3 to provide a visual understanding of the interaction effect.

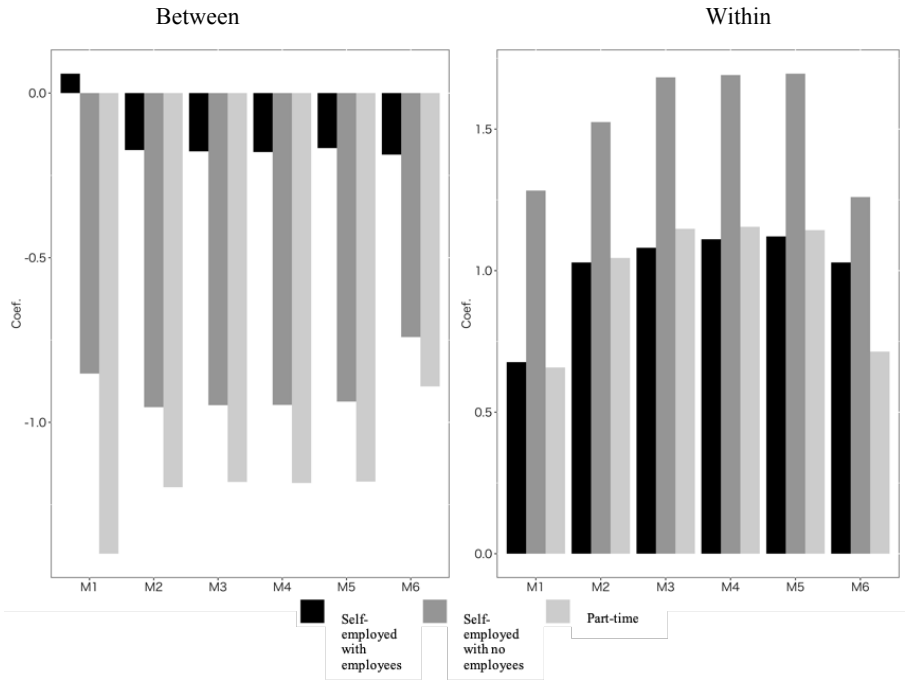

Figure 2. Estimated values by employment status

Note: Each "M" means the models are added control variables. M1 (No control variables), M2 (Survey year, Age, Gender), M3 (M2 + Educational background), M4 (M3 + Marital status), M5 (M4 + Industry), M6 (M5 + Working hours).

Table 4. Results of logged individual income included with interaction terms

	Coef.		S.E.
Intercept	4.727	***	0.075
Age (ref. 20s)			
30s	0.321	***	0.041
40s	0.575	***	0.042
50s	0.701	***	0.046
Employment status (ref. Full-time employment)			
Part-time employment	-0.752	***	0.072
Self-employed with employees	0.001		0.223
Self-employed with no employees	-0.311		0.222
Employment status * Age (ref. Full-time * 20s)			
Part-time*30s	-0.033		0.092
Part-time*40s	-0.194	*	0.091
Part-time*50s	-0.316	**	0.098
Self-employed with employee*30s	-0.607	*	0.252
Self-employed with employee*40s	-0.763	**	0.238
Self-employed with employee*50s	-0.895	***	0.236
Self-employed with no employee*30s	0.200		0.250
Self-employed with no employee*40s	0.172		0.238
Self-employed with no employee*50s	0.025		0.235
Adj. R^2	0.611		
N	2,203		

Note: This model is included with control variables as well as Table 3.

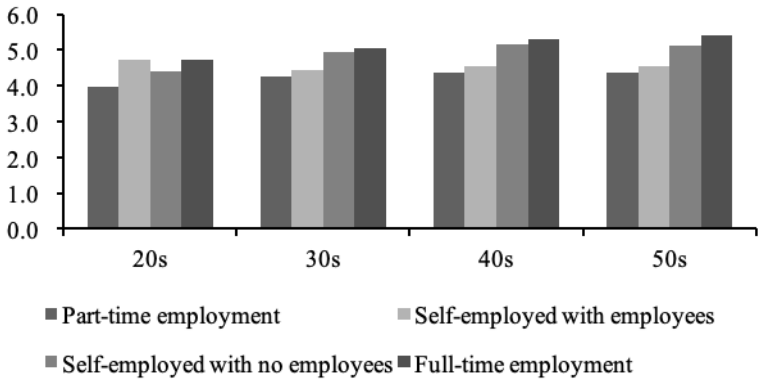

Figure3. Predicted values by employment status

Figure 3 shows that the predicted values for self-employed people without employees grow with age similarly to those in regular employment (from 4.416 in their 20s to 5.142 in their 50s). Moreover, no statistically significant correlation can be seen in the coefficients for the interaction term in Table 3, making it possible to judge that there is no gap in the effect of aging for self-employed people without employees and those in regular employment. Meanwhile, hardly any change due to aging was seen in the predicted values for self-employed people with employees. Moreover, coefficient values for the interaction term tended to grow smaller as age increased. This tendency can be seen as matching irregular employment. These results are consistent with other research findings using different survey data that found incomes do not increase with age (Genda 2003).

5. Discussion

This paper examined the impact of employment status on the individual incomes of people working in professional and technical occupations based on nationwide survey data. Focusing particularly on gaps between and within groups, the paper tried to answer the question of whether the incomes of self-employed people were disadvantageous compared to regular employees. The results found that the incomes of self-employed people in professional occupations were relatively lower and that there was also wider variance of income, and also demonstrated that income structures differ depending on whether the professionals have employees.

Specifically, it was found that the average income of self-employed people with employees was lower than regular employees, that they had a relatively larger internal variance of income, and that it was the most unstable employment status. In contrast, the average income of self-employed people

without employees was slightly lower than those of regular employees, but increased with age in line with regular employees. However, the internal variance was greater than for regular employees, and the size of the variance is between that of self-employed people with employees and people in irregular employment. In other words, it was demonstrated that self-employed professionals without employees are not necessarily disadvantaged.

So, why does having employees or not make a difference? Given results from previous studies, it is worth considering the gaps within the groups from the perspective of age and working hours. Gottschalk and Moffitt (1994) argue that there are two mechanisms creating income gaps within the groups. Firstly, because of factors that are difficult to observe, even people who have similar attributes will see different returns. Secondly, because there are groups that see major fluctuations in income at different times. It is expected that the latter, fluctuations in income at different times, is greater for the self-employed (Ogawa 2016), but the fact that they are more noticeable among self-employed people with employees is thought to be because their responses to risks brought on by changes in the market are made more challenging by employing others.

Moreover, the internal gap for the self-employed with employees was notable for growing smaller once working hours were controlled for (Figure 2). In other words, self-employment with employees is thought to be a working style that is more affected by number of working hours than is the case for self-employment without employees. The reason behind this is thought to be that while the professions found in the groups fit under the large classification of being “professional & technical occupations,” there are differences of income structures among small classification.

Common professions in both groups are instruction, construction & civil engineering, information technology engineers, massage therapy and design. However, there was a notably high percentage of instructors among the self-employed with employees (45%). In comparison to this group, there were more doctors, pharmacists and certified accountants among self-employed people without employees, although these were not majority professions (doctors 6%, pharmacists 4%, accountants 2%).

Considering these differences in occupations among professionals, it would seem that one of the reasons the incomes of self-employment without employees increases with age is the impact of accumulating professional skills. While it may certainly be the case that instructors also develop their skills with age, in relative terms it is not considered to be the type of profession where amount of experience is connected to growth in income (Ministry of Health, Labour and Welfare 2016). However, it needs to be noted that self-employed women who employ others are often found in the private tearcher, and that there will be a certain number of people within this class who do not necessarily need to increase what they earn. Such reasons are why there are limits to making interpretations solely

from the perspective of skill accumulation. However, there would appear to exist with the group of people with professional skills who work independently a class that has a different trait than that of being in "decline as a result of falling income."

The above makes it possible to seek partial revisions to interpretations in existing studies that suggested the decline of self-employment was due to falling incomes. Genda argued that self-employed people have been at a relative disadvantage in terms of income in comparison to regular employees since the 1990s, positing that "behind the fall in self-employment in Japan – a fall that is not mirrored in other developed countries – lies a deterioration in business income throughout the 1990s" (Genda 2003: 166). However, while this assessment applies to professional occupations for self-employed people with employees, it is difficult to say the same about self-employed people without employees. If the focus is placed solely on professional occupations (among which self-employment rose remarkably once the 2000s began), it appears that the incomes of self-employed people without employees are not necessarily disadvantageous. In other words, this would suggest that a class may exist within the professional occupations that has not followed the decline in self-employment. This suggestion means it is necessary when explaining the fall of self-employment in Japan to consider "revival" as well as "decline."

The contribution of this paper lies in its suggestion that self-employed people in professional and technical occupations are not necessarily disadvantaged when compared to regular employees. Previous studies have understood self-employment in Japan in a monolithic way, believing the decline to be progressing because of falling incomes. In contrast, this paper focused on professional occupations and furthermore the income gaps between and within different groups to examine the impact of employment status on income, revealing the existence of a different category of self-employment to that of convention. In doing so, the paper demonstrates the potential role that could be played by self-employed professionals in curtailing the decline.

Moreover, this paper also makes several contributions to social class theory. In terms of status attainment of professional careers in Japanese social class theory, self-employed white collar jobs (such as clerical and retail occupations) and self-employed blue collar jobs (skilled and semi-skilled work) have been seen as "status to attain" (Hara and Seiyama 1999). It has also been suggested that such status attainment does not change significantly with the times (Ishida and Miwa 2009). In regards to this research, this paper is also meaningful in terms of pushing for the necessity of considering self-employed professionals in status attainment.

Finally, a few words about limits and issues with this paper. Firstly, it was not possible to get a full grasp of the details concerning self-employed professionals due to the small sample size. Although

the available national-scale data was integrated as much as was possible, we still need to understand which occupations are actually on the rise, and incomes of which categories are changing.[6]

Secondly, the issue of how meaningful in reality are the classification categories of "professional occupations" and "self-employment." In modern labor markets, the boundary between professional and non-professional occupations is growing increasingly ambiguous. In addition, in terms of employment status there are people who are technically self-employed but have a working style close to that of being in employment, while there are people who are technically employed but have a working style close to being self-employed and independent from any organization. In consideration of this point it has to be said that there are limits to the analytical framework of this paper, which is based on conventional classifications. In terms of this point, there is a need for reexamination from both theoretical and empirical aspects. For the former, it will surely be necessary to have a perspective on how to conceptualize the professional occupations themselves in terms of the professional occupation and organization, or in terms of knowledge and ability required of the professional occupation (e.g. Sak 2010, 2016).[7] For the latter, there is a need to understand that occupational groups are units of disparity and inequality in a society with advanced division of labor, and to apply an analytical framework based on occupational sub-classifications (Weeden and Grusky 2005). Perhaps in addition to the occupational prestige scores that have been used in the past, there is a need for a comparative approach that understands the different ways people work in a composite way, such as by measuring people's socio-economic status based on years of education and income differentiated by occupational sub-classification.

Notes

1. The definitions from the national census used in this tabulation out of the classifications for employment status are "business owner with employees," "business owner without employees" and "family worker." The self-employed people who serve as the subject of this paper are presented in Chapter 3, and are taken as having fewer than 30 employees when they have them, while family workers are excluded. For this reason, it is difficult to strictly compare the rates of occupational composition, and the focus will be on understanding the trends. Moreover, the data is based on reports from the Cabinet Office. http://www.cao.go.jp (accessed August 16, 2019)
2. However, studies that used social survey data from 2005 suggest that self-employment in Japan has a higher rate of professional and skilled occupations in comparison to South Korea and Taiwan (Takenoshita 2011).
3. Details about the data are given in Chapter 3.

4. The difference between the inter-group average values were statistically significant when the variance analysis was carried out (DF=3, F=472.1, p<.000). The results from conducting multiple comparisons using Holm's method did not show any statistically significance only in the difference between the average values of regular employees and self-employed people without employees (p<.340).
5. There were particularly many self-employed instructors with employees who were women. The rate was 75% (N=68). For men, it was 11.7% (N=60).
6. As far as is confirmed by the data used in this paper, no major changes were seen among survey years. It will be necessary to reexamine this point using employment status surveys and similar.
7. The question of what a professional occupation is has long been asked in research into professional occupations (e.g. Ishimura 1969; Takeuchi 1971; Tokii 2002). See such studies for details.

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