

An Analysis of Vocational Certification in Japan
— In Light of the Findings of a Web Survey on Certifications —

Summary

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Overview

In Japan, there are numerous vocational licenses, certifications and qualifications that are of a mixed nature in terms of issuing and accreditation organizations and functionality. In this research, we collected information on the possession of licenses, certifications and qualifications and their effectiveness in finding employment and performing jobs from people currently in active service through a Web-based survey, systematically examined the relevance of licenses, certifications and qualifications to occupations, and analyzed their effectiveness on the labor market.

1. Awareness of Issues

The formation of a vocational career by working people by fully exerting their abilities throughout their long occupational life is an indispensable prerequisite for the maintenance and development of the dynamism of Japan's economic society. In order to support career formation by workers, the importance of offering information on occupations and careers is growing increasingly.

One item of occupation-related information being sought is information on vocational licenses, certifications and qualifications (those issued and certified by the national government or private-sector organizations and other third-party institutions, excluding in-house certifications. Hereinafter, they are collectively referred to as "certifications.>"). While certifications are described as an effective means of developing and enhancing goals of career formation and vocational capabilities, there also are severe criticisms that certifications do not necessarily mean their holders are competent. In addition, depending on occupations they are engaged in, workers' perceptions about the necessity of certifications are quite divergent.

In light of this situation, there is an intense need to collect information on certifications linked to specific occupations in a comprehensive and integrated manner and organize and provide such information in an easy-to-understand fashion under unified criteria to support career formation by workers. Due to the diversity and complexities of certifications, however, the actual collection and provision of information on certifications involve considerable difficulties, making it hard to prepare and develop information to be provided.

Given the present situation of and needs for information on certifications, this research is designed for an extensive collection of information on occupations and certifications through a Web-based survey and for an examination and analysis of vocational certifications in Japan.

2. Survey Method

In a Web-based survey on certifications, we identified the current occupations of Web monitors (some 1.41 million) of a research company and asked them to reply to questions on certifications possessed, their attributes and work tasks through a Web survey system developed for this research. We conducted two surveys in 2008 and 2009.

<2008 Survey>

Survey period: February 25-March 6, 2008

Coverage: We set the goal of collecting 50 samples for each occupation and closed the survey when data from 26,000 samples as a whole was obtained.

Survey content:

Question Items

Q1	Description of your current job
Q2	Length of employment
Q3	Job duties
Q4	Certifications currently held and your assessment thereof (up to 10 certifications)
Q5	Education and training necessary for acquiring your current job
Q6	Last school attended
Q7	Last two jobs held prior to your current job and your assessment thereof
Q8	Annual income from your the current job
Q9	Attributes of the respondent (age, gender, job rank, form of employment, etc.)

List of certifications: We prepared a list of 1,017 certifications, based on code table of the Public Employment Security Offices for licenses and certifications.

Amount of data collected: Data from 26,119 people

<2009 Survey>

Survey period: February 12-March 5, 2009

Coverage: We sent an e-mail to request replies to a survey to people other than the monitors in the 2008 survey to collect a total of 100 samples for each occupation, including samples collected in the 2008 survey, and closed the survey when data from 27,000 samples as a whole was obtained.

Survey content: We added the age (or age cohort) when a certification was obtained and the period required to obtain a certification to Q4 in the 2008 survey, and the size of employer company, length of service and form of employment to Q9 (Respondent attributes) in the 2008 survey.

List of certifications: We extended the list used in the 2008 survey to cover a total of 1,153 certifications.

Amount of data collected: Data from 27,014 people

3. Attributes of Respondents

Of a total of 53,133 respondents, males accounted for 67.8%, those in their 30s and 40s 72.6%; high school graduates 25.6%; university graduates 41.1%; and those with an annual income between ¥3-6 million 41.1%. As for the form of employment (for the 2009 survey only), regular full-time employees accounted for 69.5%.

4. Certifications Data Collected

Of a total of 53,133 respondents, those who possess certifications accounted for 55.7%. The

number of certifications held by one or more respondents came to 1,034, with 147 certifications held by 100 or more respondents, and 84 certifications held by 50 to 99 respondents.

5. Study Results

(1) Characteristics of the Survey

The biggest characteristic of this survey is that we were able to collect a large number of certifications through a Web-based survey from people in active service. This enabled us to (i) make a systematic and comprehensive analysis linking occupations and certifications, (ii) examine the effectiveness of certifications on the labor market, and (iii) present information on the acquisition and usefulness of certifications under the identical criteria.

On the other hand, it should be noted that the general population of people covered in this survey are monitors registered with a Web research company and that we first asked respondents for their current occupations and stopped collecting data on a given occupation when respondents engaged in that occupation reached a predetermined number, disqualifying this research as an evaluation based on random sampling of the whole of certification holders.

(2) Certifications in Relation to Occupations

(a) Varied Positioning of Certifications by Occupation

We developed a bird's-eye view of occupations and certifications by taking out certifications held by 20 or more respondents and sorting them out by the top two (in principle) occupations (based on the Classification of Occupations for Employment Services (ESCO) taxonomy as edited by the Health, Labour and Welfare Ministry) in terms of the number of holders of certifications concerned. In that process, we took into account the viewpoint of the difficulty in obtaining the certifications in terms of the length of period required to acquire them (the value of the necessary period for acquisition). The result was that many certifications were concentrated on occupations in "Category-A: Professional/technical occupations" and "Category-I: Production process/labor service occupations." In addition, the number of certifications held by people engaged in clerical occupations, sales occupations and service occupations is relatively small, and this shows that the size of the employed population in a given occupation is not necessarily linked to the multitude of certifications for that occupation. Further, for people in sales occupations, service occupations and agricultural, forestry and fisheries occupations, I-type certifications that are highly difficult to obtain (the value of the necessary period for acquisition is 5 or higher) did not appear in the bird's-eye view. Since vocational capabilities can be enhanced greatly in the course of training and studying over a long period of time for acquiring certifications, in the occupations mentioned above,

certifications that provide chances for the enhancement of vocational capabilities are scarce.

(b) Consideration of Occupational Areas Where Certifications Remain Underdeveloped

In looking at occupational areas (a middle cluster basis) according to an occupational classification of the Occupational Handbook¹ in terms of the frequency of problems combining the three aspects of certifications of (i) the ratio of possession, (ii) evaluation of the effectiveness in finding employment, and (iii) evaluation of the effectiveness in performing jobs, the following were identified as occupational areas where certifications are particularly underdeveloped²:

- Manufacture of articles of daily use (electronic/electrical musical instrument manufacturing worker, plastic products manufacturing worker, precious metal/jewel handiwork craftsmen, toy manufacturing worker, bag manufacturing worker, etc.)
- Printing/photographs (DTP operator, printing worker, DPE shop clerk, photo/video processing operator, computerized typesetting operator, etc.)
- Department store/supermarket (supermarket manager, department store sales clerk, supermarket sales clerk, department store merchandise section staff, cashier, etc.)
- Sales/delivery (merchandise field salesperson, textile wholesaler clerk, chain store supervisor, cosmetics door-to-door salesperson, daily-use article repair shop clerk, etc.)
- Leisure/sports (tour conductor, pachinko parlor clerk, amusement park staff, travel company counterperson, etc.)
- Mass media/entertainment (book editor, newspaper writer, TV/radio broadcasting engineer, musician, video editor, etc.)
- Design/advertising (Web creator, graphic designer, CG designer, art director, fashion designer, comic artist, etc.)
- Art/craftwork (pianist, artist painter, novelist, classic musician, composer, etc.)

In addition, because of low scores in the evaluation of the effectiveness in finding employment and performing jobs, occupational areas of computers (system engineer, programmer, etc.), office clerical work and research were cited as occupational areas where certifications are underdeveloped following those listed above.

¹ A brochure on vocational information published by the National Institute of Employment and Vocational Research (the predecessor of the Japan Institute for Labour Policy and Training). The first edition was published in 1981.

² When certifications held but not related to current occupations respondents are engaged in are included, the analysis was conducted on the assumption that such certifications are almost constant in each occupational area.

(3) Certifications Seen through Cost-Benefit Analysis

The acquisition of certifications requires a variety of costs, and thus decisions on whether to acquire them or not call for an examination of cost-effectiveness. In this paper, we computed the acquisition difficulty index based on the weighted averages of the number of days translated from periods required for acquiring certifications. Using the index as the cost of acquiring certifications and the effectiveness of certifications in finding employment and performing jobs as advantages, we analyzed the cost-effectiveness of certifications held by 100 or more respondents.

(a) Differences in Cost Recovery Effects between Difficult-to-Acquire Certifications (Periods)

In terms of cost-benefit, holders of certifications with long periods of time required for acquiring them are to recover costs by finding employment for occupations related to those certifications.

Looking at difficult-to-acquire certifications (periods) ranking in the top 20 in terms of the acquisition difficulty index, occupations where the particularly high ratio of 85% or more of holders of certifications find employment are doctors, dentists, physical therapists, health nurses, radiological technicians, moxa therapists, acupuncture therapists, judo physiotherapists, and massage practitioners and acupressure therapists. They are all medical certifications. Except for health nurses, approximately 70% or more of holders of these certifications replied the certifications were “essential” in finding employment for their current jobs and 60% or more of them said the certifications were “very useful” in performing their jobs. As for respondents’ attributes, women accounted for 95.9% of health nurses, while men accounted for about 80% of all other certifications. University science courses or vocational technical schools had the largest ratios for academic attainment. On the other hand, despite being difficult-to-acquire certifications (periods), only 15 to 30% of holders of high school teacher’s licenses, junior high school teacher’s licenses and curator certifications are engaged in related occupations. Reflecting the low ratios of employment in related occupations, the ratios of respondents who said their certifications were “essential” in finding employment or “very useful” in performing their jobs were low at around 20%. As attributes of holders of these education-related difficult-to-acquire certifications (periods), women accounted for 40-50%, and university humanities courses had the highest ratio for academic attainment, showing a stark contrast to holders of medical service-related difficult-to-acquire certifications (periods), where the high costs of acquiring certifications translated into the high effectiveness in finding employment.

(b) Cost-Benefit of Simplified Certifications (Periods) and Mid-Level Certifications (Periods)

Certifications with the highest cost-benefit are simplified certifications (periods) that require short periods of time for acquisition and rank in the lowest 20 in terms of the acquisition difficulty index, nevertheless, are “essential” in finding employment and “very useful” in performing jobs. These certifications included certifications for life insurance agents, nonlife insurance agents, floor-operated crane and forklift operators and crane operation specialists. When the scope is expanded to simplified certifications (periods) that are “advantageous” in finding employment, small-sized mobile crane operator certifications and large automobile driver’s licenses (Type I) come in.

Furthermore, among mid-level certifications (periods) that require a medium degree of periods for acquisition and are “essential” in finding employment and “very useful” in performing jobs was motive power car drivers (for railways). All of the above certifications other than life insurance agents and nonlife insurance agents were monopolizing certifications for vehicle operators certified only by the national government. This confirms that certifications backed up by relevant laws, even if they are not difficult-to-acquire certifications (periods), have the advantage in access to employment and performance of jobs. Highly cost-effective certifications related to vehicle operations and difficult-to-acquire certifications (periods) related to medical services that are effective in access to and performance in occupations have something in common: though in different occupational areas, both certifications relate to the protection and safety of human life and bodies. In addition, among mid-level certifications (periods) that stand in the middle between difficult-to-acquire certifications (periods) and simplified certifications (periods) in terms of the acquisition difficulty index, there were certifications that may not be “essential” but “advantageous” in finding employment in a broad array of areas, including construction, manufacturing, office clerical work, information processing, languages and food products. Occupations that holders of mid-level certifications (periods) “advantageous” in finding employment are engaged in were also wide-ranging, including certifications in construction and manufacturing areas covering from workers engaged in field work to engineers such as Class 2 construction management engineers and electric work specialists (Type 1) and certifications in office clerical areas covering not only clerical jobs but also sales jobs and plumbers, such as bookkeeping practical examinations (All-Japan Commercial High-School Association (Zensho) Class 2) and construction industry accounting clerical work persons. Since mid-level certifications (periods) can be obtained with a certain amount of costs and efforts, information on such certifications should serve as important reference information for the choice of occupations and development of vocational capabilities for that.

(4) Effectiveness of Certifications for Income, etc.

As for the effect of certifications on the level of income of women and people who finished secondary education (graduates of junior high schools and high schools), a multiple regression analysis of the possession or nonpossession of 147 certifications held by 100 or more people showed a negative impact.

In the examination of the impact of the possession or nonpossession of the same 147 certifications held by 100 or more people on the status of regular full-time employees, we have found no statistically significant effect on women, but a positive effect on the status of regular full-time employees was observed among those who finished secondary education.

These findings indicate that the possession of certifications do not necessarily lead to high income or employment as regular full-time employees directly. In fact, with respect to the negative effect of the possession of certifications (147 certifications held by 100 or more people) on the income of women and those who finished secondary education, when data on the highest income of “¥20 million or over” is excluded, the negative effect on the income of women disappeared at the significance level of 5%, and the negative effect on the income of those who finished secondary education disappeared completely. We can say that the impact of people in the highest income bracket who do not have any certifications showed itself as the negative effect of certifications on income levels.

A AnswerTree analysis of the impact of certifications on income shows that the biggest impact on income levels comes from gender for the entire population of respondents to our survey, followed by age for men, and educational background for women, with no impact observed from the possession of certifications or the effectiveness of certifications in finding employment and performing jobs. However, looking at the impact by educational background and gender, for women, both high school graduates and university graduates, the effectiveness of certifications in finding employment or performing jobs had the largest impact on income. For men, both high school graduates and university graduates, the age cohort brought the biggest impact on income. These findings indicate that certifications have a larger impact on income of women than on income of men. For men as well, there was an age cohort where the effectiveness of certifications in finding employment or performing jobs had an impact on income.

While it is premature to conclude that the possession of certifications directly leads to higher income, it can be pointed out that the possession of certifications that are effective in finding employment and performing jobs among women and the possession of certifications necessary for finding employment in the initial stage of a career among men do have an impact on higher income. In addition, while specific certifications that influence higher income are varied by gender, educational background and age, prominent certifications

include skill-based national certifications for high school graduate males (in their 30s and 50s), national certifications in medical services, legal services and aircraft flying as well as securities-related quasi-monopolizing private certifications for university graduate males (in their 20s and 30s), securities-related and life insurance-related quasi-monopolizing private certifications as well as national certifications for nursing care, etc. for high school graduate females, and national certifications in medical and legal services, etc. for university graduate females.

(5) Certification Acquisition Age

Looking at the distribution of ages of certification acquisition for a total of 31,305 people who possess one or more of 227 certifications held respectively by 50 or more people, the 20s account for more than half at 53.1%, followed by the 30s with 22.6% and the 10s with 17.5%.

Looking at the certification acquisition age by rank of periods needed to acquire certifications, people in their 20s accounted for an overwhelming majority for Rank A with the longest period of “three years or longer” required for qualification acquisition and Rank E with the shortest period of “less than one month” (86.5% for Rank A and 71.8% for Rank E), and also accounted for the highest ratio for Rank B (one year to less than three years), Rank C (six months to less than one year) and Rank D (one month to less than one year). Thus, when in their 20s, people acquire a variety of certifications ranging from those that require long periods of time to acquire, including studying at schools, to those that can be acquired in short periods of time.

6. Significance of Certifications and Development of Certifications

The findings of our research have made it clear that certifications related to the securing of life and safety are highly effective in getting engaged in occupations, regardless of the length of periods required for acquiring such certifications. The major significance of certifications for society can be said to lie in the securing of the safety of human life.

From the standpoint of career formation for workers, certifications are expected to function as the goals of vocational capability development and enhancement. The results of our research show that ages at which certifications are acquired are concentrated on the 20s, indicating that the acquisition of certifications has become the means of vocational capability development in the initial stage of career formation. While people in their 40s and 50s did not acquire so many certifications, there were a certain number of certifications for which people in their 40s and 50s accounted for more than 10% of acquirers. Many of such certifications were obtained with short periods of training and studying or on the basis of experiences during a vocational career so far. In addition to the acquisition of certifications seen as a

extension of vocational career so far, certifications that are particularly useful in finding employment in new occupational areas and can be obtained in relatively short periods of time support the setting of goals for vocational capability development for elderly people, and the development of such certifications by taking into account their effectiveness in finding jobs is worth serious consideration in order to support career formation in older age.

Certifications are not something that precisely indicates the entire picture of vocational capabilities. However, if certifications can show practical capabilities in a more visible way in combination with career history, it should contribute to the matching and smooth mobility of labor. It is deemed possible to organize certifications linked to practical vocational capabilities by coupling the evaluation by people in active service with the detailed consideration of the content of certifications and the evaluation by employer companies.

While expectations and problems about the significance of certifications are high, current vocational certifications in Japan are varied and complex. The possession of certifications did not directly lead to higher income, but certifications that are highly effective in finding employment and performing jobs were found to have an effect of increasing income among females and males in their 20s and 30s. For certifications that require long periods of time for acquisition, there were exceptions to the apparent convergence trend of occupations holders of such certifications are engaged in. Exactly because of the diversity and complexity of certifications, it is especially necessary to systematically prepare and develop objective and highly reliable information on certifications in connection with occupations.

We intend to develop and improve information infrastructure in the labor market by releasing the results of our survey in this report and expand and improve information on certifications by making use of the findings of this report.