# The Role of Facets of Job Satisfaction in the National and Socioeconomic Differences in Overall Job Satisfaction

## A Comparison Between Studies of Civil Servants in Great Britain and Japan

The process of globalization and free trade-related organizational and business practices increases work-related psychosocial risks.[1] These unfavorable changes in working conditions are largely related to mental health issues, with these trends being associated with high levels of morbidity and depression, which have become critical issues in developed countries.[2] Furthermore, the spread of mental health problems has negative effects on workers and organizations,[3] and the increasing organizational presenteeism—especially due to mental insufficiency in the workplace.[4,5]

From the perspective of the labor market, job satisfaction is considered an important indicator of workplace mental health[6–8]; it also predicts employee health and financial losses in productivity, diligence, and turnover in the organization.[9–11] In addition to working conditions, job satisfaction is an index for promoting the soundness of the relationship between employees and organizations.[12,13]

As shown, job satisfaction is important to the working population who spends most of their time at work—the levels of job satisfaction vary across countries.[14] Additionally, the report reveals that job satisfaction is stagnant in many countries[15] and that the determinants of job satisfaction are important considerations—especially in countries with low satisfaction. Throughout each country, there is a high degree of predictability of intrinsic work characteristics that contribute to perceived satisfaction in work,[16] and we confirmed that satisfaction of intrinsic factors at work (such as “interest in work” and “how abilities were used”) strongly contributed to overall job satisfaction in the Japanese Civil Servants (JACS) Study.[17]

Also, in existing job satisfaction research, it is common to examine the two approaches of the overall job satisfaction (ie, defined as global job satisfaction that

combines all feelings and cognition toward a job) and the satisfaction of various facets of a job (ie, defined as facets job satisfaction considering attitudes about various aspects of the job, like work condition, payment, coworkers, and so on) separately from the background of the psychological research.[13,18] There are other studies on factors related to overall job satisfaction, and it is known that job contents, such as job interest, social benefit, and relationships at work, that can be considered to be facets of job satisfaction are more strongly associated with overall job satisfaction than psychosocial stress as job demands, work-family conflicts, or working hours.[14,19] Moreover, we found that satisfaction in the several facets of jobs were sufficient explanation factors across occupations in overall job satisfaction.[17]

In previous studies on factors related to job satisfaction between East Asia and Western countries, there were differences in the related factors interpreted as cultural differences in how to relate to one another or how the individual views the self.[20] While reports state that there is no difference in organizational culture and climate between Japan and the United States,[21] the results are inconsistent. In the study using International Social Survey Program (ISSP) data from 21 countries, although an interesting job and a good relation with one's manager are commonly associated with job satisfaction across the countries, the former is especially shown to be truer in Japan, and the latter is truer in Britain.[14] It is also known that socioeconomic status (SES) reflects job satisfaction.[22] Sekine et al[23] reported that job stress factors explained occupational position differences of overall job satisfaction in men and family factors in women. Further, there is more dissatisfaction with work by blue-collar workers than white-collar workers.[24] However, comprehensive studies on explanatory factors of national and socioeconomic differences in overall job satisfaction have not been seen amongst countries with different cultural backgrounds.

To our knowledge, the available data regarding explanatory factors of job satisfaction inequalities is inadequate and is based on differences in SES and between Western and East Asian developed countries with different cultural backgrounds. The following research questions were asked to populations in Britain and Japan: (1) is there a difference between states in related factors of overall job satisfaction between countries? (2) Can national and occupational grade differences in overall

job dissatisfaction be explained by other job-related factors considered to be comprehensive, and to what extent?

# METHODS

## Participants

Datasets for this study are from the Whitehall II Study in Britain and the Civil Servant Study in Japan. The Whitehall II Study is a cohort study that began gathering data from participants aged 35 to 55 in 1985 who were civil servants working in London offices.[22] Participants who were 40 to 69 years old at the time of the survey from the Phase 5 Whitehall II Study had data collected during 1997 and 1999, which were used for analysis. The Japanese Civil Servant Study is a cohort study begun in 1998 for local government officials in western Japan.[17,25,26] Phase 1 data were used in this case. The targeted participants in Japan were staff between 18 and 69. For this research, those aged 40 and over were analyzed.

British and Japanese volunteers participated in non-industrial employment and collected data using a self-described postal questionnaire. Informed consent was given to all participants in advance, and they were informed that participation was free. There were 5540 full-time workers—3250 people (2463 men and 787 women) from the Britain and 2290 people (1666 men and 624 women) from Japan. The response rate for each survey was 73% in Britain[27] and 88% in Japan.[28] As in our previous studies, its strength is that it is possible to make comparisons across countries due to the homogeneity of these two occupational cohorts, such as the age of workers, full-time employment, and working in public sectors in addition to using similar questionnaires.

## Variables

The Japanese Civil Servant Study mainly used the same items as the international collaborative study with Whitehall II in Britain. All items except the SES used in this analysis were the same between the two countries.

Concerning overall job satisfaction, the study outcome is framed as a single question: “Your job as a whole taking everything into consideration.” Participants chose one of the following: “Very satisfied,” “satisfied,” “dissatisfied,” or “very dissatisfied.” In the analysis, responses were dichotomized according to Weiss theoretical definition of job satisfaction as “a positive or negative evaluative judgement one makes about one's job situation.”[29] Moreover, a previous report showed that a single-item measure of overall job satisfaction is well acceptable in study compared with structured scales.[30]

We used two main explanatory factors. Psychosocial stresses at work were evaluated with three stress indicators using Karasek extended model of job control, job demand, and support at work.[31,32] The same 25 self-reported items were used in both Britain and Japan. They measured control for 15 items, demand for four items, and support for six items, and the range of response categories was 0 to 3 points, and each scale was calculated by summing the item scores. In general, it has been shown that low control, high demand, and low support are associated with high-stress responses. Therefore, each score was divided into tertiles, which were rated as high, medium, and low.[33] Also, the Cronbach α was 0.85 in Britain and 0.78 in Japan for the control measure, 0.71 in Britain and 0.69 in Japan for the demand measure, and 0.82 in both countries for the support measure. A coefficient shown above of 0.5 or more is possible for comparisons between groups.[34]

Additionally, we used the items for the seven aspects of facets of job satisfaction as another determinant of overall job satisfaction. These assess the following work aspects: take-home pay; work prospects; coworkers; physical working conditions; how their section is run; how one's abilities are used; and the interest and skills involved in the job.[17] Each of the seven facet variables was a single item and evaluated as satisfied or dissatisfied, respectively, according to previous studies.[17,18]

Working hours and SES were used as other work characteristics indicators. Working hours were divided into less than or equal to 8 hours, 8 to 9 hours, 9 to 11 hours, and more than 11 hours adapting the approach of a previous study.[35] The occupational grade differences—which is an indicator for individual SES—were somewhat different in both countries. In the British cohort, the system is classified into three levels of occupational positions (1 = executive, 2 = administrative, 3 =

clerical), and in Japan, four levels based on the occupational classification (1 = executive, 2 = professional, 3 = clerical, 4 = office support staff: representing “security,” “transport and machine operation,” and “non-classifiable” workers by classification in the Japanese census). Adapting the previous cross-national comparative study,[36] we also combined Japan's occupational levels 3 and 4 to compare two datasets.

## Data Analyses

Logistic regression was performed to analyze the data as follows: (1) Is there a difference in explanatory factors of overall job dissatisfaction between Japan and Britain? (2) Can national and occupationally grade differences in overall job dissatisfaction be explained by the job-related factors, including job stress and facets job satisfaction variables, and to what extent? An additional question is as follows: (3) Are there explanatory factors of overall job dissatisfaction depending on grades of employment?

As a statistical model strategy, all factors including seven facets of job satisfaction and psychosocial stress (ie, control, demand, and support at work) variables associated with the overall job satisfaction in previous studies[17,35] were forced into the model by country. Additionally, in order to examine the factors that explain the differences in the overall job satisfaction among job classes and between nations, we compared the odds ratios before and after inputting the facets job satisfaction variables and stress related variables including work hours, job control, job demand, and support at work, respectively. Finally, we stratified by occupational class and examined whether there were differences in the contribution of each factor to the overall job satisfaction.

We calculated odds ratios (ORs) and 95% confidence intervals (CIs) and used IBM SPSS version 20 (IBM Japan, 19-21 Nihonbashi, Hakozaki-cho, Chuo-ku, Tokyo) for statistical analyses.

The Ethics Committee approved the data in Britain of Human Research at the University College London Medical School, and Toyama University approved the Japanese data for research (approval no. 27.81).

# RESULTS

Table 1 shows the characteristics of the participants. The proportions of overall job dissatisfaction were significantly higher in Japan at 33.4%, and 14.7% in the British population. In the employment grade, over 40.0% of the participants were in the high grade in Britain, while only 8.7% of the Japanese participants were in a similar grade. There were many low and intermediate classes in Japan, while Britain had a high proportion of intermediate and high classes. The proportion of groups that work more than 9 hours per day is higher in Britain than Japan. Job control, job demand, and support at work were often low in Japan. Many of the British participants scored relatively higher in this section compared with Japan. Regarding the seven facets of job satisfaction, all variables show a significantly higher dissatisfaction in Japan than Britain.

TABLE 1 - Characteristics of Participants in Britain and Japan

| | **Britain (*n* = 3250) %** | **Japan (*n* = 2290) %** | ***P*-Value (Chi-squared Test)** |
|---|---|---|---|
| Global job satisfaction | | | |
| Satisfaction | 85.3 | 66.6 | |
| Dissatisfaction | 14.7 | 33.4 | <0.001 |
| Sex | | | |
| Men | 75.8 | 72.8 | |
| Women | 24.2 | 27.2 | 0.011 |
| Age | | | |
| 40–50 | 34.6 | 46.9 | |
| >50 | 65.4 | 53.1 | <0.001 |
| Job class* | | | |
| Grade 1 | 44.9 | 8.7 | |
| Grade 2 | 45.0 | 53.0 | |
| Grade 3 | 10.1 | 38.3 | <0.001 |
| Work hours per day | | | |
| ≤8 h | 43.8 | 59.3 | |
| 8–9 h | 22.0 | 24.4 | |
| 9–11 h | 27.1 | 14.4 | |
| >11 h | 7.1 | 1.8 | <0.001 |
| Control at work | | | |
| Low | 13.9 | 59.7 | |
| Intermediate | 39.9 | 34.3 | |
| High | 46.2 | 6.0 | <0.001 |
| Demand at work | | | |

| | Britain (*n* = 3250) % | Japan (*n* = 2290) % | *P*-Value (Chi-squared Test) |
|---|---|---|---|
| Low | 27.9 | 56.3 | |
| Intermediate | 32.9 | 25.5 | |
| High | 39.2 | 18.2 | <0.001 |
| Support at work | | | |
| Low | 18.4 | 54.3 | |
| Intermediate | 42.2 | 33.4 | |
| High | 22.1 | 12.3 | <0.001 |
| Facets of job (dissatisfaction) | | | |
| Payment (take-home pay) | 23.1 | 49.7 | <0.001 |
| Work prospects | 41.7 | 53.8 | <0.001 |
| Coworkers | 10.1 | 31.9 | <0.001 |
| Physical working conditions | 22.0 | 42.1 | <0.001 |
| How section is run | 22.3 | 40.5 | <0.001 |
| How abilities are used | 22.9 | 40.4 | <0.001 |
| Interest and skill involved | 10.8 | 37.7 | <0.001 |

Grade 1: high grade; Grade 2: middle grade; Grade 3: low grade.

Table 2 shows the association between overall job dissatisfaction and related factors in both countries. In Britain, women showed a significantly higher odds ratio than men in age-adjusted model but, after adjusting all variables, a significant difference disappeared. In Japan, neither model showed a significant difference in sex. Regarding the differences in occupational grade, in the sex and age-adjusted models, both countries showed higher odds ratios in intermediate (grade 2) and low-grade employees (grade 3) compared with high-grade employees (grade 1). However, after adjustment for all variables, the odds ratios for reference reversed and the other two employees showed lower odds ratios—the odds ratios were significantly low, especially in the British cohort. The lower job control showed significantly higher odds ratios in both countries in the sex and age-adjusted models but, after adjustment for all variables, the odd ratios declined in both countries, with no significance in Japan. Having the highest demand at work in both countries showed significant differences when sex and age were adjusted, but there was no significant difference after adjustment for all variables in Japan. The lower support at work showed significantly higher odds ratios in both countries in the sex and age-adjusted models, but only a significant association in the lowest support category

remained in both countries after adjustment for all variables. All facets of job dissatisfaction were significantly related to the overall job dissatisfaction in both countries. In the all adjusted model, high odds ratios were particularly observed in the aspects of “the interest and skills involved in the job,” and “how one's abilities are used” in both countries. Furthermore, the coefficient of determination ($R^2$) in the

| | Britain | | | | Japan | | | |
|---|---|---|---|---|---|---|---|---|
| | Sex and Age Adjusted | | Fully Adjusted | | Sex and Age Adjusted | | Fully Adjusted | |
| | OR | (95% CI) | OR | (95% CI) | OR | (95% CI) | OR | (95% CI) |
| Sex | | | | | | | | |
| Men | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Women | 1.42 | (1.15–1.76) | 1.12 | (0.79–1.57) | 1.19 | (0.98–1.44) | 0.71 | (0.50–1.00) |
| Age | | | | | | | | |
| 40–50 | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| >50 | 0.78 | (0.64–0.95) | 0.91 | (0.67–1.24) | 0.61 | (0.51–.073) | 0.73 | (0.54–0.97) |
| Job class* | | | | | | | | |
| Grade 1 | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Grade 2 | 1.69 | (1.36–2.10) | 0.54 | (0.38–0.78) | 2.27 | (1.52–3.40) | 0.96 | (0.48–1.86) |
| Grade 3 | 2.12 | (1.52–2.96) | 0.43 | (0.23–0.81) | 2.21 | (1.47–3.32) | 0.78 | (0.40–1.52) |
| Work hours per day | | | | | | | | |
| ≤8 h | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| 8–9 h | 0.89 | (0.69–1.14) | 0.75 | (0.51–1.11) | 0.88 | (0.71–1.09) | 0.85 | (0.60–1.20) |
| 9–11 h | 0.79 | (0.62–1.00) | 0.81 | (0.55–1.21) | 1.45 | (1.13–1.86) | 0.99 | (0.64–1.54) |
| >11 h | 0.64 | (0.41–1.00) | 1.06 | (0.56–2.10) | 1.93 | (1.03–3.59) | 3.41 | (1.16–10.06) |
| Control at work | | | | | | | | |
| High | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Intermediate | 3.59 | (2.74–4.71) | 1.59 | (1.10–2.30) | 1.77 | (1.02–3.08) | 1.14 | (0.53–2.48) |
| Low | 12.97 | (9.61–17.51) | 2.71 | (1.66–4.40) | 5.37 | (3.15–7.17) | 1.89 | (0.88–4.06) |
| Demand at work | | | | | | | | |
| Low | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Intermediate | 0.84 | (0.64–1.09) | 1.11 | (0.72–1.70) | 1.40 | (1.13–1.72) | 1.00 | (0.70–1.44) |
| High | 1.41 | (1.11–1.79) | 1.61 | (1.06–2.46) | 2.20 | (1.74–2.77) | 1.31 | (0.86–1.99) |
| Support at work | | | | | | | | |
| High | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Intermediate | 3.66 | (2.71–4.93) | 1.49 | (0.99–2.25) | 2.73 | (1.84–4.05) | 1.53 | (0.86–2.73) |
| Low | 10.88 | (7.98–14.83) | 1.69 | (1.06–2.68) | 5.64 | (3.86–8.24) | 1.87 | (1.06–3.30) |
| Facets of job dissatisfaction (vs satisfaction) | | | | | | | | |
| Payment (take-home pay) | 4.17 | (3.39–5.12) | 2.29 | (1.67–3.13) | 3.95 | (3.25–4.80) | 1.86 | (1.37–2.53) |
| Work prospects | 12.60 | (9.57–16.58) | 3.00 | (2.10–4.29) | 10.11 | (8.03–12.74) | 2.42 | (1.75–3.35) |
| Coworkers | 10.50 | (8.18–13.48) | 3.54 | (2.43–5.12) | 8.01 | (6.55–9.79) | 2.85 | (2.11–3.86) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Physical working conditions | 3.76 | (3.06–4.61) | 2.22 | (1.63–3.02) | 7.30 | (5.99–8.89) | 1.75 | (1.30–2.36) |
| How section is run | 9.28 | (7.50–11.49) | 2.25 | (1.62–3.12) | 13.23 | (10.66–16.41) | 2.91 | (2.11–4.02) |
| How abilities are used | 23.91 | (18.71–30.56) | 4.63 | (3.37–6.36) | 24.24 | (19.13–30.72) | 4.73 | (3.50–6.39) |
| Interest and skill involved | 36.36 | (27.50–48.06) | 12.05 | (8.21–17.69) | 20.03 | (16.01–25.07) | 7.44 | (5.50–10.06) |
| $R^2$ | | – | | 63.7 | | – | | 70.7 |

model with all variables adjusted was relatively high, at 70.7% in Japan, compared with 63.7% in Britain.

TABLE 2 - Determinants of Overall Job Dissatisfaction in Britain and Japan
95% CI, 95% confidence interval; OR, odds ratio; R2, coefficient of determination.
Grade 1: high grade; Grade 2: middle grade; Grade 3: Low grade.

Table 3 shows the differences between the two countries and amongst the occupational grades in overall job dissatisfaction after adjusting for sex and age (Model 1), adding work hours and job stress factors (Model 2), and adding seven facets of job satisfaction (Model 3) respectively. Regarding the difference between the countries, the odds ratio in Japan was significantly higher than Britain (odds ratio was 2.26) in Model 1 adjusted by sex, age, and occupational grades. In Model 2, where work hours and job stress variables were added to Model 1, Japan's odds ratio was about the same as in Britain and the significance disappeared (odds ratio was 0.99). In Model 3—which was adjusted by the facets of job satisfaction to Model 1—the odds ratio in Japan was significantly lower (odds ratio was 0.72). In the model with all variables, Japan was even lower, showing an odds ratio of 0.59—about 60% that of Britain. Regarding the occupational grades, intermediate and low grades showed a significantly higher odds ratio than high-grade employees in Model 1, but the significance of low-grade employees (ie, grade 3 OR for grade 1) disappeared in Model 2. In Model 3, the odds ratios of intermediate and low grades to high grade were reversed. In the model with all variables adjusted, the odds ratios further attenuated, showing significantly lower risks in the order of low grade and intermediate grade (ORs were 0.59 and 0.67 respectively for the high grade). For other work characteristic variables, the final model with all variables adjusted—in addition to the age of 50 years and over with OR 0.79—in intermediate and low job control (with ORs 1.54 and 2.57 respectively), high demand (with OR 1.44), intermediate and low support at work (with ORs 1.45 and 1.71 respectively), and in

all facets of job satisfaction (the odds ratio ranges from 2.09 to 8.71), significant differences remained.

TABLE 3 - Explanatory Factors for Differences in Overall Job Dissatisfaction Between Britain and Japan and Amongst the Job Crass

| | Model 1 | | Model 2 | | Model 3 | | Full Adjusted Model | |
|---|---|---|---|---|---|---|---|---|
| | **OR** | **(95% CI)** | **OR** | **(95% CI)** | **OR** | **(95% CI)** | **OR** | **(95% CI)** |
| Country | | | | | | | | |
| Britain | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Japan | 2.26 | (1.96–2.61) | 0.99 | (0.83–1.18) | 0.72 | (0.56–0.91) | 0.59 | (0.45–0.77) |
| Sex | | | | | | | | |
| Men | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Women | 1.18 | (1.02–1.36) | 0.96 | (0.82–1.13) | 0.98 | (0.77–1.23) | 0.90 | (0.71–1.14) |
| Age | | | | | | | | |
| 40–50 | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| >50 | 0.71 | (0.62–0.81) | 0.69 | (0.60–0.80) | 0.81 | (0.66–0.99) | 0.79 | (064–0.97) |
| Job class* | | | | | | | | |
| Grade 1 | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Grade 2 | 1.85 | (1.53–2.23) | 1.33 | (1.07–1.69) | 0.73 | (0.55–0.95) | 0.67 | (0.50–0.91) |
| Grade 3 | 1.96 | (1.58–2.44) | 1.11 | (0.86–1.43) | 0.72 | (0.51–1.00) | 0.57 | (0.39–0.83) |
| Work hours per day | | | | | | | | |
| ≤8 h | | | 1.00 | (Reference) | | | 1.00 | (Reference) |
| 8–9 h | | | 0.89 | (0.74–1.07) | | | 0.82 | (0.63–1.05) |
| 9–11 h | | | 1.02 | (0.83–1.25) | | | 0.93 | (0.69–1.24) |
| >11 h | | | 1.04 | (0.70–1.54) | | | 1.51 | (0.90–2.55) |
| Control at work | | | | | | | | |
| High | | | 1.00 | (Reference) | | | 1.00 | (Reference) |
| Intermediate | | | 3.00 | (2.32–3.87) | | | 1.54 | (1.12–2.13) |
| Low | | | 8.88 | (6.72–11.73) | | | 2.57 | (1.78–3.72) |
| Demand at work | | | | | | | | |
| Low | | | 1.00 | (Reference) | | | 1.00 | (Reference) |
| Intermediate | | | 1.35 | (1.12–1.63) | | | 1.05 | (0.80–1.37) |
| High | | | 2.22 | (1.82–2.71) | | | 1.44 | (1.08–1.94) |
| Support at work | | | | | | | | |
| High | | | 1.00 | (Reference) | | | 1.00 | (Reference) |
| Intermediate | | | 2.85 | (2.23–3.63) | | | 1.45 | (1.05–2.01) |
| Low | | | 5.72 | (4.47–7.31) | | | 1.71 | (1.22–2.40) |
| Facets of job dissatisfaction (vs satisfaction) | | | | | | | | |
| Payment (take-home pay) | | | | | 2.10 | (1.69–2.60) | 2.09 | (1.68–2.60) |
| Work prospects | | | | | 2.91 | (2.30–3.67) | 2.68 | (2.12–3.39) |
| Coworkers | | | | | 3.26 | (2.59–4.10) | 3.13 | (2.48–3.95) |

| | Model 1 | | Model 2 | | Model 3 | | Full Adjusted Model | |
|---|---|---|---|---|---|---|---|---|
| | OR | (95% CI) | OR | (95% CI) | OR | (95% CI) | OR | (95% CI) |
| Physical working conditions | | | | | 2.13 | (1.73–2.63) | 1.96 | (1.58–2.42) |
| How section is run | | | | | 2.81 | (2.25–3.50) | 2.53 | (2.01–3.17) |
| How abilities are used | | | | | 4.90 | (3.96–6.07) | 4.75 | (3.82–5.90) |
| Interest and skill involved | | | | | 9.59 | (7.63–12.04) | 8.71 | (6.89–11.01) |

95% CI, 95% confidence interval; OR, odds ratio.
Grade 1: high grade; Grade 2: middle grade; Grade 3: low grade.

Table 4 shows the models stratified by occupational grades and adjusted for all variables used in Table 3. Regarding the difference between the two countries in overall job satisfaction, Japan showed a significantly low odds ratio for all grades (with ORs 0.37 in high grade, 0.64 in intermediate, and 0.54 in low grade respectively) relative to Britain after adjusting for all the factors. Job stress variables showed associations with intermediate and lowest categories both control and support in high grade, the lowest control and highest demand in the intermediate grade, and the lowest support only the in low grade for each reference. In facets of job satisfaction, all variables were associated with overall job satisfaction, and the strength of the relationship in facets of job satisfaction items also showed a similar trend for all occupational grades. However, the high grade had relatively strong associations with the variables of “co-workers” and “how abilities are used” in overall job dissatisfaction.

TABLE 4 - Association Between Overall Job Dissatisfaction and Related Factors Stratified by Job Class

| | Job Class | | | | | |
|---|---|---|---|---|---|---|
| | Grade 1 (*n* = 1659) | | Grade 2 (*n* = 2678) | | Grade 3 (n = 1203) | |
| | OR | (95% CI) | OR | (95% CI) | OR | (95% CI) |
| Country | | | | | | |
| Britain | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Japan | 0.37 | (0.15–0.91) | 0.64 | (0.46–0.90) | 0.54 | (0.31–0.96) |
| Sex | | | | | | |
| Men | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Women | 0.95 | (0.51–1.77) | 0.87 | (0.65–1.21) | 0.81 | (0.49–1.35) |
| Age | | | | | | |
| 40–50 | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |

| | Job Class | | | | | |
|---|---|---|---|---|---|---|
| | Grade 1 (*n* = 1659) | | Grade 2 (*n* = 2678) | | Grade 3 (n = 1203) | |
| | OR | (95% CI) | OR | (95% CI) | OR | (95% CI) |
| >50 | 0.67 | (0.42–1.07) | 0.81 | (0.61–1.07) | 1.01 | (065–1.54) |
| Work hours per day | | | | | | |
| ≤8 h | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| 8–9 h | 0.68 | (0.35–1.30) | 0.81 | (0.58–1.13) | 0.85 | (0.50–1.46) |
| 9–11 h | 0.73 | (0.40–1.35) | 0.89 | (0.60–1.33) | 1.04 | (0.54–2.02) |
| >11 h | 0.96 | (0.42–2.20) | 1.58 | (0.62–3.99) | – | – |
| Control at work | | | | | | |
| High | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Intermediate | 2.00 | (1.27–3.29) | 1.07 | (0.67–1.72) | 1.88 | (0.34–10.40) |
| Low | 2.92 | (1.30–6.59) | 2.21 | (1.33–3.65) | 1.82 | (0.34–9.72) |
| Demand at work | | | | | | |
| Low | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Intermediate | 1.03 | (049–2.17) | 1.07 | (0.75–1.52) | 0.93 | (0.54–1.59) |
| High | 1.52 | (0.73–3.19) | 1.51 | (1.04–2.18) | 1.14 | (0.60–2.15) |
| Support at work | | | | | | |
| High | 1.00 | (Reference) | 1.00 | (Reference) | 1.00 | (Reference) |
| Intermediate | 2.03 | (1.01–4.09) | 1.24 | (0.81–1.91) | 1.64 | (0.75–3.62) |
| Low | 2.13 | (1.01–4.50) | 1.43 | (0.91–2.26) | 2.32 | (1.05–5.09) |
| Facets of job dissatisfaction (vs satisfaction) | | | | | | |
| Payment (take-home pay) | 1.90 | (1.18–3.07) | 2.21 | (1.64–2.99) | 2.00 | (1.28–3.13) |
| Work prospects | 2.87 | (1.74–4.73) | 6.72 | (1.88–3.64) | 2.81 | (1.71–4.61) |
| Coworkers | 4.38 | (2.58–7.45) | 2.88 | (2.11–3.94) | 2.95 | (1.81–4.80) |
| Physical working conditions | 1.91 | (1.20–3.03) | 1.93 | (1.44–2.58) | 2.15 | (1.38–3.34) |
| How section is run | 2.46 | (1.52–3.98) | 2.59 | (1.88–3.56) | 2.50 | (1.58–3.96) |
| How abilities are used | 7.15 | (4.52–11.29) | 4.32 | (3.19–5.84) | 4.26 | (2.72–6.68) |
| Interest and skill involved | 7.77 | (4.18–14.45) | 9.22 | (6.76–12.57) | 9.10 | (5.71–14.52) |

95% CI, 95% confidence interval; OR, odds ratio.

# DISCUSSION

In this study, the odds ratio in Japan for overall job dissatisfaction compared with Britain was more than double, but after adjusting for job-related factors, the difference reversed, and Japan had less than 60% risk. As for the difference in overall job satisfaction between British and Japanese employees, adjusting the job stress factors eliminated Japan's risk to the same extent as Britain, and adjusting facets of job satisfaction reversed Japan's disadvantage. Unexpectedly, regarding the difference in occupational differences for overall job dissatisfaction, the risks of the lower occupational grades for the high grade showed lower risks, with the odds

ratios reversed after adjusting for facets of job satisfaction. Additionally, the factors related to overall job dissatisfaction at each job grade were strongly related to the similar factors about facets of job dissatisfaction.

For explanatory factors of overall job satisfaction in the British cohort, the strong relationship of the facets of job satisfaction to overall job satisfaction in this study was mostly consistent with the Japanese one. Tatsuse and Sekine[17] reported in a Japanese civil servant study using the same dataset for those aged 18 to 69 that "interest and skill involvement" and "how abilities are used" are strongly related to overall job satisfaction. There was a trend in this study, especially in the British cohort, where the former was strongly related, as shown in Table 2. Conversely, psychosocial stress factors such as control, demand, and support at work were only related in either country to part of the overall job satisfaction, except for the lowest job support in both countries shown in Table 2. As the previous study showed, job support may buffer dissatisfaction at work.[37] These results are consistent with previous studies where job satisfaction and job stress are different factors.[23,35] Job dissatisfaction predicts the onset of depression 1 year later, but a report indicated that different effects of stress factors inhibit recovery during the same period.[38] This report also supports the result that job satisfaction and stress factors are each independent.

Notably, in this international comparative study, Japan was more dissatisfied than Britain, as shown in Table 1, which was also consistent with the previous report.[11] In international research on national cultural differences,[39] Japan, considered as a country with low individualism, had cultural characteristics that differed in Hofstede cultural framework from Britain regardless of the economic power of either country. Although the percentage of overall job dissatisfaction in Japan was high in this study, as a result of examining the related factors in overall job satisfaction in Japan and Britain, similar factors were strongly related in both countries. These results may mean that the cultural impact on overall job satisfaction is small. An international comparative study by Sousa-Poza and Sousa-Poza[14] identified having an interesting job and good manager relations as factors related to job satisfaction across countries. These previous results were similar to this result, that is, "interest and

skills involved" and "how abilities are used" were strongly related to overall job satisfaction in both countries.

Regarding the explanatory factors of the difference with overall job satisfaction between countries, in this study, the differences were explained more strongly by the facets of job satisfaction than by job stress factors. This result was also consistent with previous research that stated having an interesting job and good relations with one's manager or colleagues at work buffer cultural and social differences in job satisfaction.[40] Furthermore, dissatisfaction in facets of jobs used in this study were proportionally higher in Japan than in Britain in all variables and, consequently, Japan's high odds ratio was estimated to be reversed before and after these factors were adjusted. According to Monnot,[20] Confucian states, including Japan, had lower job satisfaction than in Western countries due to the cultural background of collectivism. However, this key finding is that low levels in job satisfaction are not based on cultural differences in thought, but is explained in terms of the content of the work, such as job interest and abilities used. This result may be related to the fact that the Japanese organizational climate since 1990—reported in a comparative study with the United States—was transformed into a Western work style by a series of management projects.[41]

The results of explanatory factors showed that the grade differences in overall job satisfaction were also reversed. In Britain and Japan, respectively, the models with adjusted age and sex had a higher risk of overall job dissatisfaction with grades 2 (intermediate grade) and 3 (low grade). However, after adjusting for all variables, the odds ratio changed extensively, resulting in a lower risk of overall job dissatisfaction with grades 2 and 3 versus 1, as shown in Table 2. Also, as Table 3 showed, the change was most significant when facets of job satisfaction were adjusted. It was shown that, in addition to work stress factors, facets of job satisfaction are also the factors in reducing occupational grade difference. Furthermore, one might say that work stress factors (ie, control, demand, and support at work) reduced the high-grade advantage,[23] but facets of job satisfaction improved the adverse effects of lower grades. Furthermore, as shown in Table 4, the model stratified by occupational grade showed that the factors of all facets of job satisfaction significantly related to overall job satisfaction amongst all occupational grades. Also, in the highest-grade

positions, “co-workers” and “how abilities are used” were more related to overall job satisfaction than other occupational grades. A comparative study amongst managers in Japan, the United States, and India showed that support from colleagues was strongly related to job satisfaction and that there was no difference between the three countries.[42] This result may be due to the nature of management work.

In this study, there was no sex difference in overall job satisfaction. Spector[13] and Sousa-Poza and Sousa-Poza[14] concluded that there was no sex difference in job satisfaction and its determinants of satisfaction, respectively. Additionally, the weakness of the relationship between job demand in job stress indicators and overall job satisfaction—which was not related by the mixed country examination in Table 3—is consistent with the results of the previous study.[14] The result that the degree of job demand is not related to overall job satisfaction also supports the hypothesis that the job demand is neutral to motivational outcomes such as engagement and professional efficacy.[43]

## Limitations

This study has several limitations. First, our study design was cross-sectional. However, this result is based on a study of cultural and socioeconomic contexts, and the purpose is to compare the social determinants of overall job satisfaction internationally. Our scope does not place much emphasis on causality.

Second, the participants were civil servants. Civil servants are from relatively well-educated and white-collar groups compared with the general population. In comparing Japan and Britain, the fact that Japanese had more dissatisfaction at work than British workers in this study was consistent with the results of the general population in other international surveys.[11,14] Although caution is required for the generalization of results, it seems to be well worth the international comparison amongst civil servants—especially concerning the socioeconomic status and health indicators.[25,44,45]

Third, in this study, we examined whether each factor, including facets of job satisfaction, contributes to the overall job satisfaction independently, and we have not been able to verify each related route. Therefore, the model may be over-

adjusting. Based on this result, it may be necessary to further verify the pathways of each factor to overall job satisfaction.

## CONCLUSIONS

The determinants of overall job satisfaction in both countries were related to facets of job satisfaction rather than job stress factors, especially interest and skill involved, and abilities used on the job. Moreover, the totals of these facets of job satisfaction were found to be strong factors that could change the differences between countries and amongst socioeconomic inequalities. These results are useful for comprehensive work management and workers' mental health measures across countries and provide important insights into improving socioeconomic disparities at work.

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