



# Foreign early career academics' well-being profiles at workplaces in Japan: a person-oriented approach

Yusuke Sakurai<sup>1</sup> · Shannon Mason<sup>2</sup>

Accepted: 25 November 2022 / Published online: 7 December 2022  
© The Author(s), under exclusive licence to Springer Nature B.V. 2022

## Abstract

The well-being of foreign early career academics (FECAs) has been the subject of research attention in relation to present demanding academic milieus in general and to those unfamiliar workplace settings in particular. A traditional variable-oriented approach that focuses on mean scores can easily gloss over the diverse nature of the group under study. Our study, conducted in Japan, took a person-oriented approach and identified FECAs' distinct well-being profiles and the associations of their personal attributes with the profiles. Most (64%) were classified as having the highest stress scores and moderate scores for sense of belonging, control of workload and career development engagement. The second-largest profile (29%) included FECAs characterised by the lowest stress score and a strong sense of belonging, control of workload and career development engagement. Those in the smallest profile (8%), who had moderate levels of workload control and stress, lacked a sufficient sense of belonging and career development engagement. Among FECAs' personal attributes, contract type was significantly associated with their distribution across the three well-being profiles, whereas no attributes of FECAs' unique nature significantly pertained to their distribution. Our results suggested that support for well-being may be important regardless of background. Our investigation, using multifaceted well-being subscales over a composite scale, offers analytical, strategic support for academics in globalised higher education.

**Keywords** Foreign academics · Early career academics · Well-being · Person-oriented approach · Japan

## Introduction

As globalisation is a key force impacting higher education institutions (HEIs) across much of the world, academics may find themselves, by choice or necessity, in positions at institutions away from their home countries. This is particularly true of early career academics (ECAs), who may be

---

✉ Yusuke Sakurai  
sakurai@hiroshima-u.ac.jp

<sup>1</sup> Center for Academic Practice and Resources/Research Institute of Higher Education, Hiroshima University, Higashi-Hiroshima City, 1-3-2 Kagamiyama, Hiroshima 739-8511, Japan

<sup>2</sup> Faculty of Education, Nagasaki University, 1-14 Bunkyo-Machi, Nagasaki 852-2315, Japan

more likely to relocate internationally in order to establish their careers (Tzanakou, 2021). ECAs in general may experience specific challenges due to excessive external expectations, stressful conditions and a flawed concept of meritocracy that limits their well-being (e.g. Castelló et al., 2017; Derby-Davis, 2014; Sun et al., 2011). For those who are in unfamiliar workplaces abroad, termed “foreign early career academics” (FECAs) in this study, they likely face additional challenges as they navigate linguistic and cultural differences (e.g. Brown, 2019; Huang et al., 2019; Kim, 2016).

Japan is one nation that has attempted to attract more foreign academics in recent decades, largely in response to broader government efforts to improve the country’s position in the global economy. In particular, foreign academics are seen to contribute to HEIs in Japan in three main ways: English-medium teaching, foreign language teaching and on-campus internationalisation (Brotherhood, 2021). A robust government-led attempt to attract foreign academics began in the early 2000s (Huang, 2021). This led to the Global 30 and Top Global University initiatives which encouraged chosen HEIs to hire more foreign academics and diversify their international activities (Brotherhood, 2021). There was an increasing growth of foreign academics around this time, indicating a quantitative success of the initiatives (Brotherhood, 2021; Huang, 2021). However, Japan still has few foreign academics relative to other major countries (Franzoni et al., 2012), at 5% of the total population of full-time faculty (Ministry of Education, Culture, Sports, Science and Technology (Ministry of Education, Culture, Sports, Science and Technology, 2021). Furthermore, efforts to recruit international academics have been in decline specifically during 2016–2020 (National Institute of Science and Technology Policy, 2021).

As the presence and importance of foreign academics in Japan increase, it is in the interests of individual institutions, and the higher education system as a whole, to ensure positive well-being and engagement in FECA’s academic work (e.g. Sasao & Hatta, 2016). Nevertheless, FECAs in Japan have reported various challenges. For example, they may be treated as crowd pullers to increase the institutional international façade, while not being afforded access to the institutional decision-making processes largely retained by Japan-born academics (Brotherhood et al., 2019). Other challenges, which are detailed later in this paper, include short-term contracts and limited opportunities for tenure and difficulties in developing interpersonal relationships and developing a sense of belonging, as well as navigating cultural differences.

Within this context of potential conflict and challenge for FECAs in Japan, there has been some work toward developing means to increase their well-being and engagement in work (e.g. Sasao & Hatta, 2016). However, a knowledge gap exists regarding cohort composition, as well-being profiles are distinct across individuals. Thus, adopting a person-oriented approach, this study examined types of FECAs with unique well-being conditions. It also explored whether the sub-cohorts were characterised by personal attributes, including gender, discipline, position, contract type, language used at work, origin country and language competence. This study contributes to the literature on FECAs by treating the case of Japan, whose scholarly communities are considered insular (Franzoni et al., 2012), and thus, the challenges faced by FECAs may be intense.

## Well-being as a multifaceted construct

Although no single accepted definition of well-being exists, instances of the concept often exhibit two shared aspects: positive emotions, such as happiness and satisfaction (hedonic approach), and meaningful engagement in life, including connections with others and autonomy (eudaimonic approach) (Ruggeri et al., 2020; Ryan & Deci, 2001; Ryff, 2014).

Snyder et al. (2011) proposed a concept with three dimensions sharing some components: emotional, psychological and social. The emotional dimension concerns life satisfaction, and the psychological dimension pertains to satisfaction with the self, including personal growth and the sense of the meaning of life. The social dimension includes interpersonal relatedness, reflected by a sense of belonging. Others have proposed other dimensions of well-being (Ruggeri et al., 2020; Ryff, 2014; Ryff & Keyes, 1995), although they have utilised similar major components, relying on hedonic and eudaimonic aspects.

The multifaceted conceptualisations have a history of theoretical and practical application. Ryan and Deci (2001) argued that well-being is ‘best conceived as a multidimensional phenomenon that includes aspects of both the hedonic and eudaimonic conceptions’ (p. 148). Ruggeri et al. (2020) suggested that single measures do not represent the potential implications of people’s nuanced realities. For example, while ECAs experience competition in academia, they express moderate satisfaction with work (Bentley et al., 2013). High levels of work-related satisfaction are also reported among FECAs in Japan (Huang et al., 2019; Sasao & Hatta, 2016). These findings call for a multifaceted analytic perspective rather than reliance on a summative measure. The breakdown of a scale into submeasures can offer analytic insights into patterns of workplace well-being and help develop strategic interventions (Ruggeri et al., 2020). Ryff (2014), however, warns that many submeasures may produce insufficient differentiation.

Well-being is key to academics’ development and productivity (Bentley et al., 2013; Kumar et al., 2020; Pace et al., 2019; Ruggeri et al., 2020). Promoting foreign academics’ positive affect contributes to their performance (Ghasemy et al., 2021), thereby promoting an institution’s global presence. However, while the well-being literature has developed some theoretical approaches, empirical research on researchers’ well-being has often overlooked them. Kumar et al. (2020) used stress to proxy for well-being, and Pace et al. (2019) used a questionnaire covering ‘general health’ and ‘psychological strain’. Seipel and Larson (2018, p. 9) focused on academics’ satisfaction with ‘teaching/service’ and ‘overall satisfaction with their position, department and institution’. Castelló et al. (2017) and others relied on engagement and burnout literature to underscore their approach to doctoral students’ well-being.

## Well-being as a socio-psychological phenomenon

Well-being is considered a social phenomenon in occupational health literature, not merely an individual one. Stubb et al. (2011) used ‘socio-psychological well-being’ to refer to the interplay between doctoral students’ well-being and their scholarly communities. Well-being is conceived as dependence on negotiating sense-making processes between cognitive processing and life events, including the complexities of work and collegial climate (Ryff, 2014). Hence, cognitive (mis)fit with the work environment may regulate positive and negative states of well-being (Kneer & Haybron, 2020). For academics from abroad, *inter alia*, living in an unfamiliar environment entails challenges to well-being. They may feel disconnected and overwhelmed by unstated workplace norms. Referring to the literature, we operationalised this study by focusing on the relevant key dimensions of FECAs’ socio-psychological well-being, considering satisfying (hedonic) and engaging (eudaimonic) experiences at work: sense of belonging, workload control, career development and stress conditions.

Positive interpersonal relationships are key to well-being (Huppert, 2009). Collegiality is a foundational element of sound and ethical scholarly communities (Sasao & Hatta, 2016). It is associated with job satisfaction and may reduce turnover intention (Daly & Dee, 2006). However, ECAs working on short-term contracts often fail to achieve a sense of belonging (Seipel & Larson, 2018). In particular, HEIs are expected to nurture FECAs' sense of belonging and provide an inclusive scholarly community (Liu-Farrer, 2015; Munene, 2014), but some foreign academics still feel like outsiders (Kim, 2016; Munene, 2014). FECAs' reluctance to request help from their local colleagues can drive them further apart (Bailey et al., 2021). Research in Japan has indicated FECAs' frustration with their work environment owing to language barriers, unspoken work norms and perception of foreigners as outsiders, which contribute to their impaired sense of belonging (Brotherhood et al., 2019; Brown, 2019; Komisarof & Hua, 2016; Larson-Hall & Stewart, 2018; Liu-Farrer, 2015). They furthermore experience xenophobic and systemic unfair treatment, occurring more frequently to females than to males (Liu-Farrer, 2015; Nagatomo & Cook, 2018).

The degree of control over one's situation contributes to the sense of well-being (Huppert, 2009). The number of miscellaneous tasks associated with teaching and research has increased, and overwork has become more widespread, even coming to be encouraged in academia (Pace et al., 2019). Excessive workload and pressure are major adverse factors for researchers' psychological health (Horta et al., 2019; Opstrup & Pihl-Thingvad, 2016; Pace et al., 2019; Sabagh et al., 2018; Sun et al., 2011), and it appears that Japanese academia barely focuses on academics' work–life balance (Sasao & Hatta, 2016). Inappropriate workloads lessen researchers' motivation to remain at their workplace (Derby-Davis, 2014). Furthermore, FECAs in Japan experience frustration regarding their autonomy, workload and access to institutional decision-making (Brotherhood et al., 2019; Brown, 2019). Their inferior status may limit their autonomy regarding their work (Kim, 2016).

Maintaining well-being requires doing things considered worth doing by the doer (Huppert, 2009; Ryan & Deci, 2001). Ryff and Keyes (1995) argued that feelings of development are an important dimension of well-being. For ECAs, healthy engagement in career development is a vital component of well-being (Sasao & Hatta, 2016). Strategic ECR training is growing in importance for universities and researchers and is contributing to disciplinary knowledge (Pearce & Metcalfe, 2016). Hence, FECAs' perceptions of their engagement in development opportunities should be investigated in their constantly evolving communities.

Stressful academic environments are an international phenomenon (e.g. Horta et al., 2019; Opstrup & Pihl-Thingvad, 2016; Sabagh et al., 2018). They result from increasing degrees of administrative responsibility, demanding teaching duties, competitive research expectations and inability to balance among wide-ranging responsibilities (Bentley et al., 2013; Opstrup & Pihl-Thingvad, 2016; Pace et al., 2019; Sabagh et al., 2018). Stress in researchers is associated with their collegial relationships and their access to support (Castelló et al., 2017; Horta et al., 2019; Sabagh et al., 2018). Viewing writing as a burden rather than as an intellectual vocation is correlated with mental fatigue (Castelló et al., 2017). Younger researchers are under more stress and less satisfied than senior staff (Bentley et al., 2013; Sun et al., 2011). Foreign academics experience greater stress than their domestic counterparts. Many work in a foreign-language setting, thereby adding an additional burden (McAllum, 2017). Their stress also comes from their peripheral status as newcomers and the dismissive attitudes of some colleagues and students (Munene, 2014).

FECAs experience their work in many ways due to diversity and different situations. Bentley et al. (2013) observed different patterns of well-being in a cross-national study. Huang et al.

(2019) indicated variability in foreign academics' work experience in Japan, including varied academic positions, disciplines and nationalities. Additionally, Ruggeri et al. (2020) demonstrated that researchers with lower well-being report greater variability scores. Nonetheless, little research has addressed what unique profiles are detected pertaining to their well-being status.

## This study

### Research goals

This study (1) identifies several profile clusters of well-being among FECAs in Japan and (2) examines their characteristic attributes, including gender, discipline, position, contract type, language used at work, country of origin and Japanese language competence. The study was motivated by the intrinsic interest of identifying particular profiles of FECAs' regarding well-being at the workplace, which could be beneficial for institutions concerned with talent retention and a diverse workplace (e.g. Kim, 2016). In turn, this facilitates performance and institutional productivity.

### Setting

There are approximately 800 HEIs in Japan, counting 4-year universities and technical colleges (Ministry of Education, Culture, Sports, Science and Technology, 2021). Researchers also work at about 40 other research institutions (Ministry of Education, Culture, Sports, Science and Technology, n.d.). As noted earlier, full-time foreign HEI academics constitute around 5% of the total. In quantitative terms, they constitute 9526 of 190,448 researchers (Ministry of Education, Culture, Sports, Science and Technology, 2021). FECAs' initial contracts in Japan are often signed for 3 to 5 years, with little chance of tenure (Larson-Hall & Stewart, 2018). Usually, these fixed-term researchers do not receive associated benefits, such as sabbatical leave or retirement bonuses. A four-tiered rank structure is common in Japan: starting at assistant professor, then lecturer, associate professor and up to full professor. These can have either permanent or fixed-term (including tenure-track) status. Part-time instructors have no academic title. No division exists between research and non-research academics except for part-time teaching staff.

According to Takagi (2018), fixed-term social science ECAs are often hired to manage service and teaching commitments and are not expected to conduct research. However, constant output during their limited working time or even outside of work hours is mandatory for those seeking to advance. Those who actively contribute to disciplinary knowledge may experience much frustration in Japanese academia.

### Data collection and participants

We recruited survey participants according to the following criteria: (1) considered themselves academics or were affiliated with Japanese universities or research institutes, (2) had non-Japanese nationality and (3) had earned their PhD less than 8 years ago or were 39 years old or younger without a PhD, adopting the definition of an ECA as stipulated by Japan Society for the Promotion of Science. Doctoral students were not included due to their specific position in the Japanese higher education system. While doctoral students may be 'employed' as research 'workers' in Europe (Shin et al., 2018, pp. 2–3) and thus considered one of the cohort of ECAs, in Japan, doctoral students are neither deemed

‘academics’ nor ‘employed’ by the institution. As students, they are charged tuition, and while some may attain a grant from their university or a competitive nation-wide scheme, there is no status conferred to them as academics or researchers. They will rarely be given teaching duties. These conditions, which are relevant to one’s well-being, mean that they cannot reliably be placed in the same group as ECAs in this study.

We found FECAs in researcher rosters by identifying non-Japanese names. Recruitment by email or post was accomplished using institutional websites and the national J-Global researcher database ([jglobal.jst.go.jp](http://jglobal.jst.go.jp)), which gathers and organises researcher information in Japan. Where possible, we sent email invitations; where this was not possible, we sent letters through the mail with a QR code providing a link to the survey. We also sent invitations via J-Global, which is equipped with a private messaging function.

In response to our 1544 invitations (468 by email, 295 by post and 781 via J-Global), we received 333 completed questionnaires. Among these, two were eliminated as duplicates another two, and a third one appeared thrice. We used an instructional manipulation check item (Maniaci & Rogge, 2014) to detect inattentive participants: ‘This is a control question. Please choose “strongly agree” for this item’. A total of 305 respondents provided usable answers.

About two-thirds of the participants were male (61.3%) (Table 1). More participants were working at national universities (51.1%) than at any other types of institution. The 30 s were the largest age group (75.7%). More than half were Asian-born (57.4%). Predictably, most had the title of assistant professor (52.4%). There were three respondents who were fixed-term professors who satisfied the criteria for ECAs based on their demographic information. Two-thirds were employed for a fixed term (62.3%). The survey collected information on participants’ disciplines, the most competent language, Japanese language proficiency and years of work experience in Japan. There were no missing values. Approval for this project was obtained from the Research Ethics Committee at Ochanomizu University.

## Measurement

This study used self-reports to measure well-being in the following perspectives: sense of belonging, career development, control of workload and stress. We used the five-item Sense of Belonging Survey (Rubin et al., 2019) to measure the sense of membership and support; sample items are ‘I receive good support from my co-worker’ and ‘I don’t feel like I fit in well at my institution’ (reverse scoring item). We selected this survey for its suitability for scholarly communities (content validity).

We assessed levels of control of workload by adopting three measures from the Academic Work Environment Survey (Houston et al., 2006). These items measure how well academics handle their current workload, including teaching and research; sample items are ‘I am expected to teach and/or supervise a reasonable number of students’ and ‘I often need to work after hours to meet my work requirements’ (reverse scoring). Studies have indicated the psychometric adequacy of this survey in the university context (e.g. Pace et al., 2019).

We measured FECAs’ engagement in career development using the nine-item Career Engagement Scale (Hirschi et al., 2014) (e.g. ‘I sincerely thought about my personal values, interests, abilities and weaknesses’ and ‘I collected information about employers, professional development opportunities or the job market in my desired area’). This scale is relevant to career development for researchers. Hirschi et al. (2014) found good psychometric properties for the single factorial structure. The FECAs responded to these three scales on a scale of 1 (strongly disagree) to 7 (strongly agree).

**Table 1** Participant demographics

Variable	Category	<i>F</i>	Ratio
Gender	Male	187	61.3
	Female	104	34.1
	Prefer not to say	12	3.9
	Other	2	0.7
Institutional type	National university	156	51.1
	Private university	96	31.5
	Public university	28	9.2
	Research institute	13	4.3
	Colleges of technology	9	3
	Other	3	0.9
Age	51 or older	2	0.7
	41–50	39	12.8
	31–40	231	75.7
	30 or younger	33	10.8
Discipline	Humanities	77	25.2
	Social sciences	71	23.3
	Engineering sciences	55	18.0
	Informatics	23	7.5
	Medicine, dentistry and pharmacy	19	6.2
	Biological sciences	17	5.6
	Chemistry	16	5.2
	Mathematical and physical sciences	12	3.9
	Agricultural and environmental sciences	12	3.9
	Multidisciplinary	3	1.0
Academic rank	Professor	3	1
	Associate professor	33	10.8
	Lecturer	74	24.3
	Assistant professor	160	52.4
	Researcher	32	10.5
	Part-time teaching staff	2	0.7
	Other	1	0.3
Contract	Tenured position	65	21.3
	Tenure-track position	47	15.4
	Fixed-term position	190	62.3
	No formal contract	2	0.7
	Do not know	1	0.3
Most competent language	English	156	51.7
	Japanese	57	18.9
	Others	89	29.5

The stress variable was identified with a single-item measure: stress refers to a person's state of being tense, restless, nervous or sleepless because his/her mind is troubled all the time. Have you felt this kind of stress recently? (Elo et al., 2003). Responses were given on a 9-point scale (1 = not at all to 9 = very much). Studies in various occupational settings (Elo et al., 2003) and HEIs (Opstrup & Pihl-Thingvad, 2016) have validated the measure.

**Table 1** (continued)

Variable	Category	<i>F</i>	Ratio
Japanese language proficiency test (JLPT) level	Native speaker level	62	20.3
	JLPT N1 level (highest)	103	33.8
	JLPT N2 level	38	12.5
	JLPT N3 level	34	11.1
	JLPT N4 level	17	5.6
	JLPT N5 level	14	4.6
	Lower than JLPT N5	13	4.3
	Other or unsure	24	8.0
Birthplace	Asia (outside Japan)	175	57.4
	Europe	57	18.7
	North America	36	11.8
	South America	12	3.9
	Japan	11	3.6
	Oceania	9	3.0
	Africa	5	1.6
Work experience in Japan	3 years or less	61	20
	6 years or less	109	35.7
	9 years or less	73	23.9
	More than 9 years	62	20.3

## Analysis

FECAs' responses were computed with a mean score for each scale. To classify the FECAs according to patterns in their well-being scores, we conducted model-based clustering with the *mclust* package (version 5.4.7) in the R environment. This person-centred approach assumes a multivariate distribution of data across sub-populations, that is, assumes a necessary heterogeneity of a sample containing more than a single subgroup. This analysis classifies individuals into latent subgroups through variety in their score patterns, considering intra- and interpersonal differences (Raufelder et al., 2013). Because this approach offers data-driven statistics that estimate the optimal number of clusters, it has an advantage over heuristic approaches, such as hierarchical and k-means clustering (Fralely & Raftery, 2007). In our analysis, we used the Bayesian information criterion (BIC) to identify the number of clusters where greater scores indicate a better fit. We named the clusters according to patterns seen in the score means. To identify differences among cluster profiles, we used Welch's test, which is suitable for samples with unequal variances.

Applying the chi-squared and Fisher's exact tests (significance level at 5%) with an effect size (*w*), we examined clusters concerning the distribution of FECAs' genders, disciplines, academic ranks, contract types, most proficient languages, Japanese language competence and birthplace (Table 1). Fisher's exact test is suitable when more than 20% of cells have expected cell frequencies smaller than five. The survey collected information on FECAs' major research disciplines, following the Japanese funding disciplinary categories



(11 categories). However, as some categories had a small number of respondents, we created new categories, partly adopting Biglan's classification (Biglan, 1973), resulting in larger categories that allowed meaningful statistical inference. Because the largest groups were researchers in the humanities and social sciences, we kept them as they were. Accordingly, the disciplines were categorised into four domains: hard-pure (medicine, dentistry and pharmacy/chemistry/mathematical and physical sciences/biological sciences/agricultural and environmental sciences), hard-applied (engineering sciences/informatics), social sciences and humanities. Only three researchers were professors (fixed term), and two were part-time teaching staff; these were removed from the analysis as outliers. We adopted three main contractual categories: fixed term, tenure track and tenured. We classified the FECAs into three categories based on their most proficient language: English, Japanese and others. We grouped respondents according to their Japanese skill. Foreign researchers who must conduct institutional tasks in Japanese need high levels of Japanese language proficiency. Therefore, we investigated whether they had the highest level of the Japanese Language Proficiency Test (N1 level). Those who were ignorant about the test were excluded from the analysis. Finally, FECAs from some non-Asian regions were too few for adequate analysis, so the distribution of Asian or non-Asian FECAs across clusters was examined. Those who were born in Japan were omitted.

Multiple comparisons using the Benjamini–Hochberg adjustment identified cluster pairs with significantly different observed frequencies for the FECAs' attributes. The adjustment was suitable for controlling type I error in multiple comparisons (Thissen et al., 2002).

## Results

Descriptive results (Table 2) suggested that the FECAs were highly engaged in *career development*. The low degrees of correlations imply that these factors were moderately independent. As expected, *stress* was significantly negatively correlated with other scales, with the exception of *career development*.

### Identifying FECA subgroups

The clusters that the FECAs form in relation to their well-being conditions were investigated. An inspection of the BIC values for the clustering analysis best supported a three-cluster solution (Table 3 and Fig. 1). We labelled the clusters in terms of sets of means as (1) *stressed 'in-control' academics* ( $n=195$ ), (2) *unstressed engaged academics* ( $n=87$ ) and (3) *disengaged academics* ( $n=23$ ).

*Stressed 'in-control' academics'* scores for *sense of belonging*, *control of workload* and *career development* showed moderate levels of engagement in collegial community and work. However, the large value for *stress* is notable. The *unstressed engaged academics* profile was characterised by the least *stress* mean accompanied by the highest *sense of belonging* and *control of workload* scores. Their *career development* score was the highest but not significantly different from that of the *stressed 'in-control' academics* group. The *disengaged academics* showed an extremely low *career development* score, but their perception of their *control of workload* and *stress* levels on average were not strongly pessimistic. However, this cluster had the lowest *sense of belonging* to their institutions.

**Table 2** Means, standard deviations, correlations and internal consistencies for well-being scales

Scale	<i>M</i> ( <i>SD</i> )	1	2	3	4	Internal consistency	
						$\alpha$	$\omega$
1. Sense of belonging	4.90 (1.37)	-				0.87	0.90
2. Control of workload	3.77 (1.32)	0.26**	-			0.64	0.66
3. Career development	5.56 (0.92)	0.14*	.02	-		0.88	0.91
4. Stress (single scale, 1–9)	5.58 (2.29)	-0.28**	-.31**	-.08	-	-	-

\* $p < 0.05$ , \*\* $p < 0.01$

### FECAs' attributes in relation to their well-being profiles

The second task was to examine differences among the clusters in relation to FECA attributions. Table 4 indicates the distribution patterns of FECAs and their personal attributes for each cluster. Significant differences were found among contract types ( $\chi^2(4) = 10.36$ ,  $p = 0.035$ , Fisher's exact test,  $p = 0.023$ ), showing a possible small effect size ( $w = 0.185$ ,  $1 - \beta = 0.733$ ) (small, 0.1–0.3; medium, 0.3–0.5; or large, 0.5+). However, multiple comparisons with the Benjamini–Hochberg adjustment did not present a significant difference between the results of the clusters. The adjusted standardised residuals ( $p = 0.08$ ) indicated that those on the tenure-track contract were overrepresented in the *stressed 'in-control'* academics cluster ( $n = 37$ ,  $z = 2.254$ ) and underrepresented in the *unstressed engaged academics* cluster ( $n = 6$ ,  $z = -2.597$ ).

The analyses further suggested that the well-being clusters were independent of FECAs' gender ( $\chi^2(2) = 0.21$ ,  $p = 0.924$ ; Fisher's exact test,  $p = 0.925$ ), discipline ( $\chi^2(6) = 2.17$ ,  $p = 0.904$ ; Fisher's exact test,  $p = 0.906$ ), academic rank ( $\chi^2(6) = 3.96$ ,  $p = 0.628$ ; Fisher's exact test,  $p = 0.681$ ), work experience in Japan ( $\chi^2(6) = 3.78$ ,  $p = 0.707$ ; Fisher's exact test,  $p = 0.701$ ), most competent language ( $\chi^2(4) = 1.29$ ,  $p = 0.863$ ; Fisher's exact test,  $p = 0.885$ ), Japanese language competence ( $\chi^2(2) = 2.45$ ,  $p = 0.294$ ; Fisher's exact test,  $p = 0.299$ ) and birthplace ( $\chi^2(2) = 4.01$ ,  $p = 0.135$ ; Fisher's exact test,  $p = 0.135$ ).

## Discussion

### Methodological reflections

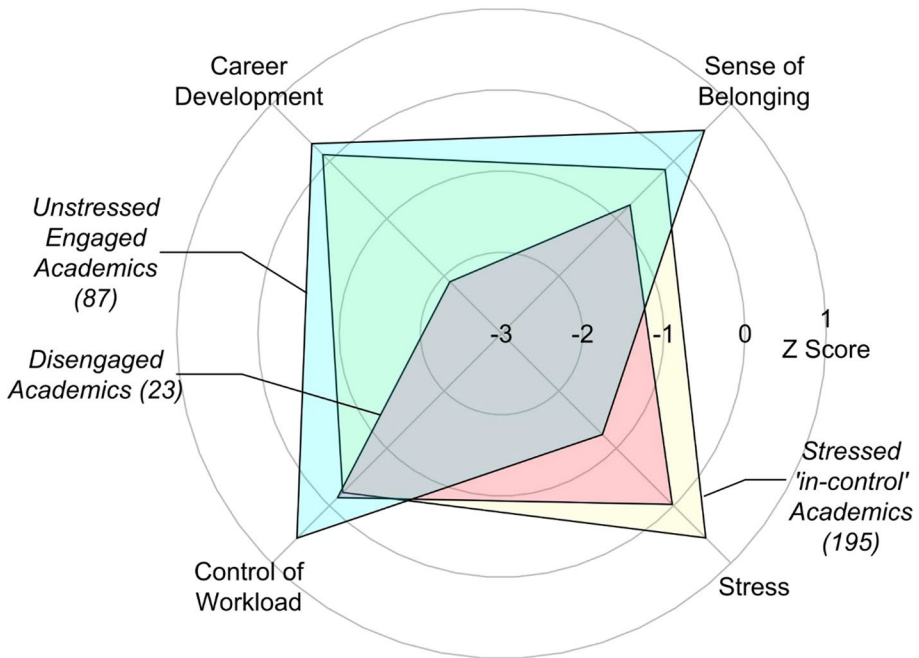
The unique context of this study may prevent its generalisability to other contexts, as conceptions of well-being are tied to culture (Ryan & Deci, 2001). Bentley et al. (2013) demonstrated that Japanese academics' patterns of occupational satisfaction and distress differ from their UK and Australian counterparts. Moreover, future policy strategies in Japan may seek to drastically refurbish international academics' environment, affecting their well-being.

Some measurement issues should be considered. The study data are only self-reports. Consistency indices for the measure, control of workload, were below 0.70. This indicates that the measure should be improved. Our results resemble those of Ruggeri et al. (2020), who found greater score variations in lower well-being groups; lower well-being groups'

**Table 3** Mean scores of well-being profile clusters

Scale	1. Stressed 'in-control' (195) <i>M (SD)</i>	2. Unstressed engaged (87) <i>M (SD)</i>	3. Disengaged (23) <i>M (SD)</i>	Welch's test	Post hoc Games- Howell pairwise comparison
1. Sense of belonging	4.70 (1.29)	5.64 (0.95)	3.86 (2.01)	$F(2, 55.66) = 27.23^{**}$	2 > 1, 2 > 3
2. Control of workload	3.46 (1.21)	4.51 (1.17)	3.58 (1.69)	$F(2, 55.46) = 23.76^{**}$	2 > 1, 2 > 3
3. Career development	5.67 (0.71)	5.85 (0.68)	3.63 (1.11)	$F(2, 54.71) = 41.18^{**}$	1 > 3, 2 > 3
4. Stress (1–9)	6.86 (1.22)	2.74 (1.08)	5.52 (2.89)	$F(2, 53.56) = 397.46^{**}$	1 > 2, 3 > 2

\*\*  $p < 0.01$



**Fig. 1** Standardised scores of well-being profiles

scores were concentrated around the scales' midpoint, which prompted greater selection options in both directions for these respondents than those with greater well-being. It will be worth examining whether this pattern is a methodological coincidence or an authentic phenomenon.

These limitations do not overshadow the strengths of the study. Traditional regression studies have identified overall trends in target cohorts, and our person-oriented approach presented a novel understanding for FECAs' well-being profiles. We furthermore used multiple scales to obtain a nuanced understanding of FECAs' well-being conditions (e.g. Ruggeri et al., 2020). A single scale could not identify these unique patterns.

## Reflections on findings

Employing a person-oriented approach, this study fills a gap in knowledge, demonstrating that most FECAs (64%) moderately engaged in their career development possessed a sense of belonging to their institution and took control of their work but felt highly stressed at work. Our results support Bentley et al. (2013), who showed that many academics in Japan are generally satisfied with but stressed by their work. In addition, Bentley et al. (2013) found that their stress levels were not correlated with dissatisfaction with work. Shin et al. (2018) also identified a similar pattern for Japan. The results of our person-oriented and multifaceted approaches can help us understand why satisfaction and stress levels were not anticorrelated overall; that is, the coexistence of subgroups with unique well-being profiles fails to explain this simple association.

**Table 4** Cross-tabulation of the distribution of FECAs' attributes in the well-being clusters

	Stressed 'in-control'	Unstressed engaged	Disengaged
Gender: $\chi^2(2)=0.21, p=0.924, w=0.027, 1-\beta=0.066$ ; Fisher's exact test, $p=0.925$			
Female	65	31	8
Male	121	51	15
Discipline: $\chi^2(6)=2.17, p=0.904, w=0.085, 1-\beta=0.156$ ; Fisher's exact test, $p=0.906$			
Hard-applied	45	26	7
Hard-pure	51	19	6
Social sciences	47	20	4
Humanities	49	22	6
Academic rank: $\chi^2(6)=3.96, p=0.682, w=0.115, 1-\beta=0.267$ ; Fisher's exact test, $p=0.681$			
Associate professor	18	13	2
Lecturer	46	23	5
Assistant professor	104	43	13
Researcher	23	6	3
Contract type: $\chi^2(4)=10.36, p=0.035, w=0.185, 1-\beta=0.733$ ; Fisher's exact test, $p=0.023$			
Tenure-track	37	6	4
Fixed-term	120	60	10
Tenured	37	20	8
Most competent language: $\chi^2(4)=1.29, p=0.863, w=0.065, 1-\beta=0.124$ ; Fisher's exact test, $p=0.885$			
English	97	46	13
Other	57	27	6
Japanese	39	14	4
Japanese competence: $\chi^2(2)=2.53, p=0.283, w=0.095, 1-\beta=0.276$ ; Fisher's exact test, $p=0.279$			
N1 or higher	112	40	13
Lower than N1	69	38	9
Birthplace: $\chi^2(2)=4.01, p=0.135, w=0.117, 1-\beta=0.416$ ; Fisher's exact test, $p=0.135$			
Asia	117	49	9
Not Asia	70	36	13

Our results revealed that FECAs' demographic attributes were seldom associated with their well-being profiles. This is surprising, given previous results suggesting associations with local language skills (e.g. Komisarof & Hua, 2016) and contract lengths (Seipel & Larson, 2018). We hypothesised that high Japanese proficiency gave respondents access to certain informational resources, and Asian researchers felt greater affinity with locals (e.g. Brotherhood et al., 2019; Komisarof & Hua, 2016; Liu-Farrer, 2015). Researchers with limited Japanese skills, a distinct background or a fixed contract did not cluster with respondents having low levels of well-being. Bentley et al. (2013) found weak or nonsignificant associations of academics' demographics with their job satisfaction while demonstrating more conspicuous associations of environmental conditions. Gender was nonsignificant. Huppert (2009) observed that the effect of gender on well-being was ambiguous.

Xu (2008) argued that gender effects can be confounded with productivity and employment contracts. Our study supports the claim that academics' demographic profiles cannot sufficiently explain their job well-being. Environmental conditions and their attitude to these may indicate their well-being to a greater degree; or, as Ryan and Deci (2001) argued, their inherent personality features may do this.

The only significant factor associated with the FECA clusters was contractual differences. However, the effect size remained small and post hoc comparisons suggested the probationary result that tenure-track researchers are more likely to experience demanding psychological conditions. We did not explore the reasons for this, but our results suggest greater industriousness among FECAs seeking tenure. Ruggeri et al. (2020) indicated that researchers in unstable employment reported poor well-being. In Japan, even a tenure-track contract takes 3–5 years to result in tenure. Tenure-track workers normally perform duties equivalent to those of tenured staff. Conversely, researchers with a fixed-term contract exclusively engage in specific projects, either educational or research, and are often exempt from institutional management and committee responsibilities. Some contracts do not even demand research outputs (Takagi, 2018). This exemption from responsibilities may enable better psychological well-being.

We acknowledge that COVID-19 has been an unprecedented challenge for all academic staff, including FECAs, although investigating this factor was beyond the scope of the study. Academics' increased distress was associated with the restrictions and demands stemming from the pandemic (e.g. Huang, 2022; Watermeyer et al., 2021). The reform of institutions due to the pandemic has impaired job security and autonomy (Watermeyer et al., 2021), adversely impacting well-being. In Japan, COVID-19 has also entailed challenges for foreign academics. For example, the travel ban prevented family reunions, and poorer information flow due to the language barrier and decreased interaction with colleagues were observed (e.g. Huang, 2021). However, some positive changes resulting in better productivity were also identified, including reduced commuting time and increasing availability of online learning opportunities (Huang, 2022). Thus, the interplay between these positive and negative conditions in institutional and private hemispheres may have affected academics' well-being during the pandemic.

## Implications

This study shows that no personal attributes are particularly pertinent to foreign researchers' distribution over well-being clusters. This is of practical value, as intervention and support practices are not necessary to highlight the variation of their origins and may be effective regardless of their nationality, if it were adequately provided in an appropriate language(s). In a Japanese context, studies have suggested possible threat to the well-being of social sciences (Takagi, 2018) and female ECAs (Liu-Farrer, 2015; Nagatomo & Cook, 2018). Our results instead implied comprehensive support is valid regardless of their disciplines and genders, while more comparative research is needed in Japan. Others argue that targeted approaches to particular groups may be ineffective, as the proportion with a serious condition is very small, even in target groups (e.g. Huppert, 2009). Rather, Huppert (2009) argued that collective initiatives can effectively address the potential low level of well-being of individuals at risk in a larger cohort.

Our results underscore the particular importance of support for well-being among tenure-track researchers. Stressful workplace conditions may challenge them to

develop as more mature and adaptable researchers (Kumar et al., 2020), but some may need support. Although further study is necessary to corroborate the reliability of intervention practices, there may be two strategies. First, more tenure-track FECAs fall into the cluster where members show a poorer sense of belonging, control of workload and stress conditions than the *unstressed engaged* respondents. Deliberate attention to these dimensions should be included in faculty development seminars and training. For example, Juberg et al. (2019) presented a protocol for mindfulness workshops to reduce the psychological burden experienced by university staff. Kumar et al. (2020) demonstrated the significant positive effects of casual meetings to discuss researchers' stress levels during the COVID-19 pandemic. Haines et al. (2007) suggested that regular walking activity promoted the mental conditions of the faculty, although modern researchers' time constraints are a major obstacle (Juberg et al., 2019). Second, both researchers and administrative staff should consider the challenges that FECAs face and be aware of key experiences that may influence their well-being. Simple, tangible actions can create a mutually caring community where FECAs can flourish. Lyubomirsky and Layous (2013) suggested that small behavioural changes, such as deliberately expressing gratitude and helping others, enhance one's own well-being, while the effect on international cohorts may be inconsistent owing to their linguistic or cultural barriers (Juberg et al., 2019).

Although their proportion was small, a cluster of FECAs was identified with least engagement in career development opportunities and weakest sense of membership. This combination is problematic for both individuals and institutions. The results identified no personal attributes to distinguish this group, preventing immediate countermeasures. Given their poor sense of membership and engagement in career development, those in this cluster likely have weak emotional and professional connection with their colleagues and few developmental opportunities, although they properly carry out their duties. After they acknowledge this disconnection, they have difficulty recovering their engagement because they have already become emotionally distanced. In this regard, it is extremely important to create an inclusive community in the early stages of employment. HEI leaders must offer career development opportunities accessible for FECAs as institutional employees (Lyubomirsky & Layous, 2013) and for other colleagues to proactively develop collegiality. Van Waes et al. (2018) showed that convener's attention to staff networking in their pedagogical training was valuable to support staff's enduring relationships, even after the training. The UK initiative of Vitae Researcher Development Framework may be helpful for Japan as well. This allows researchers and institutions to discuss ECAs' strategic development (Pearce & Metcalfe, 2016). Some Vitae training opportunities are available in Japan (Pearce & Metcalfe, 2016), but more evidence-based approaches are still needed. As Sakurai and Pyhältö (2021) identified the disciplinary patterns of researcher engagement in skill development, their disciplinary expectations should also be considered for programme contents.

## Conclusion

Drawing on a multifaceted well-being construct, this study identified three major clusters of FECAs in Japan according to their response patterns. The largest showed the highest stress score, with moderate scores of sense of belonging, control of workload and career

development engagement. The second included FECAs with the least stress and highest sense of belonging, control of workload and career development. The smallest group of FECAs showed roughly average scores for workload control and stress but inadequate sense of belonging and career development engagement. Our analysis demonstrated that FECAs in tenure-track positions faced more challenges than tenured and fixed-term FECAs. Surprisingly, no attributes particularly associated with foreigners' unique characteristics, such as birthplace or language competence, explained the FECAs' systematic distribution across well-being clusters.

A larger sample would allow the data to be broken down into more personal attribute categories, which could offer novel insights, such as researchers' birthplaces (in this study, Asia vs not Asia) and disciplines (in this study, only four disciplinary domains). This study focused on FECAs' workplaces, but the impact of other non-occupational factors should be also taken into account, such as social inclusion and work-family interface.

Moreover, as the studies of faculty well-being have identified distinct characteristics in several countries (Bentley et al., 2013; Ruggeri et al., 2020), our study should be replicated in other contexts. To this end, the content and construct validity of researchers' well-being measure should be addressed. The critique of Stubb et al. (2011) still holds true—the theoretical constructs of well-being for a scholarly community remain inconsistent.

Huppert's (2009) review noted that negative emotion makes a person amenable. The positive consequences entailed by temporary low levels of well-being and the negative consequences of well-being should also be attended to. The person-oriented approach may produce additional insights for local researchers, as it is seldom employed for researchers' well-being. Because one's improved well-being can benefit others, we hope this work will support those who 'aspire to be fully functioning and satisfied in this earthly life' (Ryan & Deci, 2001, p. 161).

**Funding** This work was supported by JSPS KAKENHI grant number 20K14025.

## Declarations

**Ethics approval** All procedures performed in this study were approved by a research ethics committee at Ochanomizu University, Japan.

**Conflict of interest** The authors declare no competing interests.

## References

- Bailey, W., Bordogna, C. M., Harvey, H., Jones, G., & Walton, S. (2021). Transformational, inclusive, and multicultural or empty rhetoric? Perceptions and experiences of international academic staff. *Journal of Further and Higher Education*, 45(3), 349–362. <https://doi.org/10.1080/0309877X.2020.1762848>
- Bentley, P. J., Coates, H., Dobson, I. R., Goedegebuure, L., & Meek, V. L. (2013). Academic job satisfaction from an international comparative perspective: Factors associated with satisfaction across 12 countries. In P. J. Bentley, H. Coates, I. R. Dobson, L. Goedegebuure, & V. L. Meek (Eds.), *Job satisfaction around the academic world* (p239–262). Springer. [https://doi.org/10.1007/978-94-007-5434-8\\_13](https://doi.org/10.1007/978-94-007-5434-8_13)
- Biglan, A. (1973). The characteristics of subject matter in different academic areas. *Journal of Applied Psychology*, 57(3), 195–203. <https://doi.org/10.1037/h0034701>
- Brotherhood, T., Hammond, C. D., & Kim, Y. (2019). Towards an actor-centered typology of internationalization: A study of junior international faculty in Japanese universities. *Higher Education*, 79(3), 497–514. <https://doi.org/10.1007/s10734-019-00420-5>



- Brotherhood, T. (2021). International faculty: Increasing mobility. In P. Snowden (Ed.), *Handbook of Higher Education in Japan* (261–274). MHM Limited. <https://doi.org/10.2307/j.ctv1zckxc3.25>
- Brown, C. A. (2019). Foreign faculty tokenism, English, and “internationalization” in a Japanese university. *Asia Pacific Journal of Education*, 39(3), 404–416. <https://doi.org/10.1080/02188791.2019.1598850>
- Castelló, M., McAlpine, L., & Pyhältö, K. (2017). Spanish and UK post-PhD researchers: Writing perceptions, well-being and productivity. *Higher Education Research & Development*, 36(6), 1108–1122. <https://doi.org/10.1080/07294360.2017.1296412>
- Daly, C. J., & Dee, J. R. (2006). Greener pastures: Faculty turnover intent in urban public universities. *The Journal of Higher Education*, 77(5), 776–803. <https://doi.org/10.1080/00221546.2006.11778944>
- Thissen, D., Steinberg, L., & Kuang, D. (2002). Quick and easy implementation of the Benjamini-Hochberg procedure for controlling the false positive rate in multiple comparisons. *Journal of educational and behavioral statistics*, 27(1), 77–83. <https://doi.org/10.3102/10769986027001077>
- Derby-Davis, M. J. (2014). Predictors of nursing faculty’s job satisfaction and intent to stay in academe. *Journal of Professional Nursing*, 30(1), 19–25. <https://doi.org/10.1016/j.profnurs.2013.04.001>
- Elo, A. L., Leppinen, A., & Jahkola, A. (2003). Validity of a single-item measure of stress symptoms. *Scandinavian Journal of Work, Environment & Health*, 29(6), 444–451. <https://doi.org/10.5271/sjweh.752>
- Fraley, C., & Raftery, A. E. (2007). Bayesian regularization for normal mixture estimation and model-based clustering. *Journal of Classification*, 24(2), 155–181. <https://doi.org/10.1007/s00357-007-0004-5>
- Franzoni, C., Scellato, G., & Stephan, P. (2012). Foreign-born scientists: Mobility patterns for 16 countries. *Nature Biotechnology*, 30(12), 1250–1253. <https://doi.org/10.1038/nbt.2449>
- Ghasemy, M., Muhammad, F., Jamali, J., & Roldán, J. L. (2021). Satisfaction and performance of the international faculty: To what extent emotional reactions and conflict matter? *SAGE Open*, 11(3), 1–15. <https://doi.org/10.1177/21582440211030598>
- Haines, D. J., Davis, L., Rancour, P., Robinson, M., Neel-Wilson, T., & Wagner, S. (2007). A pilot intervention to promote walking and wellness and to improve the health of college faculty and staff. *Journal of American College Health*, 55(4), 219–225. <https://doi.org/10.3200/JACH.55.4.219-225>
- Hirschi, A., Freund, P. A., & Herrmann, A. (2014). The career engagement scale: Development and validation of a measure of proactive career behaviors. *Journal of Career Assessment*, 22(4), 575–594. <https://doi.org/10.1177/1069072713514813>
- Horta, H., Jung, J., Zhang, L.-F., & Postiglione, G. A. (2019). Academics’ job-related stress and institutional commitment in Hong Kong universities. *Tertiary Education and Management*, 25(4), 327–348. <https://doi.org/10.1007/s11233-019-09039-8>
- Houston, D., Meyer, L. H., & Paewai, S. (2006). Academic staff workloads and job satisfaction: Expectations and values in academe. *Journal of Higher Education Policy and Management*, 28(1), 17–30. <https://doi.org/10.1080/13600800500283734>
- Huang, F. (2022). Impacts of the COVID pandemic on international faculty’s academic activities and life in Japan. *Higher Education Quarterly*, 76(2), 260–275. <https://doi.org/10.1111/hequ.12369>
- Huang, F., Daizen, T., & Kim, Y. (2019). Challenges facing international faculty at Japanese universities: Main findings from the 2017 national survey. *International Journal of Educational Development*, 71, 1–8. <https://doi.org/10.1016/j.ijedudev.2019.102103>
- Huang, F. (2021). International faculty at Japanese universities: Main findings from national survey in 2017. In F. Huang & A. R. Welch (Eds.), *International faculty in Asia: In comparative global perspective* (21, 45–62). Springer. [https://doi.org/10.1007/978-981-33-4980-3\\_4](https://doi.org/10.1007/978-981-33-4980-3_4)
- Huppert, F. A. (2009). Psychological well-being: Evidence regarding its causes and consequences. *Applied Psychology: Health and Well-Being*, 1(2), 137–164. <https://doi.org/10.1111/j.1758-0854.2009.01008.x>
- Juberg, M., Spencer, S. D., Martin, T. J., Vibell, J., da Costa Ferro, A., Kam, B., & Masuda, A. (2019). A mindfulness-based intervention for college students, faculty, and staff: A preliminary investigation. *Clinical Case Studies*, 18(3), 185–199. <https://doi.org/10.1177/1534650119836166>
- Kim, S. K. (2016). Western faculty ‘flight risk’ at a Korean university and the complexities of internationalisation in Asian higher education. *Comparative Education*, 52(1), 78–90. <https://doi.org/10.1080/03050068.2015.1125620>
- Kneer, M., & Haybron, D. M. (2020). *Happiness and well-being: Is it all in your head?* Evidence from the folk.
- Komisarof, A., & Hua, Z. (2016). Making sense of transnational academics’ experiences. In A. Komisarof & Z. Hua (Eds.), *Crossing boundaries and weaving intercultural work, life, and scholarship in globalizing universities* (pp. 174–200). Taylor and Francis.
- Kumar, S., Kodidela, S., Kumar, A., Gerth, K., & Zhi, K. (2020). Intervention and improved well-being of basic science researchers during the COVID 19 era: A case study. *Frontiers in Psychology*, 11 <https://doi.org/10.3389/fpsyg.2020.574712>

- Larson-Hall, J., & Stewart, J. (2018). Making a career of university teaching in Japan: Getting (and keeping) a full-time job. In C. C. Hale & P. Wadden (Eds.), *Teaching English at Japanese universities* (pp. 11–24). Routledge.
- Liu-Farrer, G. (2015). From outside in: The organizational life of a Chinese immigrant in Japan. In A. Komisarof & Z. Hua (Eds.), *Crossing boundaries and weaving intercultural work, life, and scholarship in globalizing universities* (53–56).
- Lyubomirsky, S., & Layous, K. (2013). How do simple positive activities increase well-being? *Current Directions in Psychological Science*, 22(1), 57–62. <https://doi.org/10.1177/0963721412469809>
- Maniaci, M. R., & Rogge, R. D. (2014). Caring about carelessness: Participant inattention and its effects on research. *Journal of Research in Personality*, 48, 61–83. <https://doi.org/10.1016/j.jrp.2013.09.008>
- McAllum, K. (2017). Language (in)competency, communication strategies, and the development of an international academic teacher identity: Becoming an audible minority. *Higher Education Research & Development*, 36(4), 763–776. <https://doi.org/10.1080/07294360.2016.1239614>
- Ministry of Education, Culture, Sports, Science and Technology. (2021). 高等教育機関《報告書掲載集計》. Retrieved June 6 from [http://www.mext.go.jp/b\\_menu/toukei/chousa01/kihon/1267995.htm](http://www.mext.go.jp/b_menu/toukei/chousa01/kihon/1267995.htm)
- Ministry of Education, Culture, Sports, Science and Technology. (n.d.). 研究所等: 文部科学省. Retrieved June 13 from [https://www.mext.go.jp/b\\_menu/link/ken.htm](https://www.mext.go.jp/b_menu/link/ken.htm)
- Munene, I. I. (2014). Outsiders within: Isolation of international faculty in an American university. *Research in Post-Compulsory Education*, 19(4), 450–467. <https://doi.org/10.1080/13596748.2014.955637>
- Nagatomo, D. H., & Cook, M. (2018). “He said, she said”: Female and male dynamics in Japanese universities. In P. Wadden & C. C. Hale (Eds.), *Teaching English at Japanese Universities* (pp. 159–164). Routledge.
- National Institute of Science and Technology Policy. (2021). 科学技術の状況に係る総合的意識調査.
- Opstrup, N., & Pihl-Thingvad, S. (2016). Stressing academia? Stress-as-offence-to-self at Danish universities. *Journal of Higher Education Policy and Management*, 38(1), 39–52. <https://doi.org/10.1080/1360080X.2015.1126895>
- Pace, F., D’Urso, G., Zappulla, C., & Pace, U. (2019). The relation between workload and personal well-being among university professors. *Current Psychology*, 1–8 <https://doi.org/10.1007/s12144-019-00294-x>
- Pearce, E., & Metcalfe, J. (2016). A national approach to realising the potential of researchers: The case of the UK. In *The Science and Technology Labor Force* (273–290). [https://doi.org/10.1007/978-3-319-27210-8\\_12](https://doi.org/10.1007/978-3-319-27210-8_12)
- Raufelder, D., Jagenow, D., Hoferichter, F., & Drury, K. M. (2013). The person-oriented approach in the field of educational psychology. *Problems of Psychology in the 21st Century* 5 (2013) 79–88. <https://doi.org/10.33225/ppc/13.05.79>
- Rubin, M., Paolini, S., Subašić, E., & Giacomini, A. (2019). A confirmatory study of the relations between workplace sexism, sense of belonging, mental health, and job satisfaction among women in male-dominated industries. *Journal of Applied Social Psychology*, 49(5), 267–282. <https://doi.org/10.1111/jasp.12577>
- Ruggeri, K., Garcia-Garzon, E., Maguire, Á., Matz, S., & Huppert, F. A. (2020). Well-being is more than happiness and life satisfaction: A multidimensional analysis of 21 countries. *Health and Quality of Life Outcomes*, 18(192), 1–16. <https://doi.org/10.1186/s12955-020-01423-y>
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52(1), 141–166. <https://doi.org/10.1146/annurev.psych.52.1.141>
- Ryff, C. D. (2014). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics*, 83(1), 10–28. <https://doi.org/10.1159/000353263>
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719–727. <https://doi.org/10.1037//0022-3514.69.4.719>
- Sabagh, Z., Hall, N. C., & Saroyan, A. (2018). Antecedents, correlates and consequences of faculty burnout. *Educational Research*, 60(2), 131–156. <https://doi.org/10.1080/00131881.2018.1461573>
- Sakurai, Y., & Pyhältö, K. (2021). Disciplinary differences in doctoral student engagement in generic skills learning. *Studies in Graduate and Postdoctoral Education*, 12(2), 230–246. <https://doi.org/10.1108/SGPE-03-2020-0018>

- Sasao, T., & Hatta, N. (2016). Internationalization and faculty well-being in liberal arts colleges: An often neglected issue in East Asia. In T. Sasao & N. Hatta (Eds.), *Liberal arts education and colleges in East Asia* (pp. 165–177). Springer. [https://doi.org/10.1007/978-981-10-0513-8\\_14](https://doi.org/10.1007/978-981-10-0513-8_14)
- Seipel, M. T., & Larson, L. M. (2018). Supporting non-tenure-track faculty well-being. *Journal of Career Assessment*, 26(1), 154–171. <https://doi.org/10.1177/1069072716680046>
- Shin, J. C., Kehm, B. M., & Jones, G. A. (2018). The increasing importance, growth, and evolution of doctoral education. In *Doctoral education for the knowledge society* (pp. 1–10). Springer.
- Snyder, C. R., Lopez, S. J., & Pedrotti, J. T. (2011). *Positive psychology: The scientific and practical explorations of human strengths*. SAGE Publications. <https://books.google.co.jp/books?id=ZCE9Qx8VHAEC>
- Stubb, J., Pyhältö, K., & Lonka, K. (2011). Balancing between inspiration and exhaustion: PhD students' experienced socio-psychological well-being. *Studies in Continuing Education*, 33(1), 33–50. <https://doi.org/10.1080/0158037X.2010.515572>
- Sun, W., Wu, H., & Wang, L. (2011). Occupational stress and its related factors among university teachers in China. *Journal of Occupational Health*, 280–286. <https://doi.org/10.1539/joh.10-0058-oa>
- Takagi, K. (2018). Accommodating project-based professionals in higher education institutions in Japan. *Journal of Higher Education Policy and Management*, 40(3), 272–286. <https://doi.org/10.1080/1360080x.2018.1462434>
- Tzanakou, C. (2021). Stickiness in academic career (im)mobilities of STEM early career researchers: An insight from Greece. *Higher Education*, 82, 695–713. <https://doi.org/10.1007/s10734-020-00596-1>
- Van Waes, S., De Maeyer, S., Moolenaar, N. M., Van Petegem, P., & Van den Bossche, P. (2018). Strengthening networks: A social network intervention among higher education teachers. *Learning and Instruction*, 53, 34–49. <https://doi.org/10.1016/j.learninstruc.2017.07.005>
- Watermeyer, R., Shankar, K., Crick, T., Knight, C., McGaughey, F., Hardman, J., Suri, V. R., Chung, R., & Phelan, D. (2021). 'Pandemia': A reckoning of UK universities' corporate response to COVID-19 and its academic fallout. *British Journal of Sociology of Education*, 42(5–6), 651–666. <https://doi.org/10.1080/01425692.2021.1937058>
- Xu, Y. J. (2008). Gender disparity in STEM disciplines: A study of faculty attrition and turnover intentions. *Research in Higher Education*, 49(7), 607–624. <https://doi.org/10.1007/s11162-008-9097-4>

**Publisher's note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.