

How Do Japanese Workers Experience and View International Communication?:

A Web-based Questionnaire Survey*

Takunori TERASAWA **

1. Introduction

This paper reports the general findings of ‘The Survey of Japanese Workers’ English Use: Second Wave’, conducted by the author in March 2022. This is the second in a series of sociolinguistic surveys, the first of which was conducted in March 2021 (see Terasawa, 2021b, for a descriptive report). These surveys examine English use frequency among Japanese workers and its determinants using quantitative and robust estimation methods. After analysing the first survey, the author presented some findings in Terasawa (2021a), which estimated the average frequency of English use and other international communication experiences and examined the characteristics of Japanese users of English. In addition, Terasawa (2022) estimated the degree of differences in English use frequency between 2019 and 2020 and examined the possible impact of the COVID-19 outbreak on international communication behaviours.

Study of English use frequency

Although English use frequency has not been studied extensively in applied linguistics, it can be regarded as an important component of theoretical and empirical studies on the global spread of English (Crystal, 2003; de Swaan, 2001; O’Regan, 2021; Pennycook, 1994; Phillipson, 1992; Ricento, 2015). This phenomenon, accelerated in the current globalised world, is worth studying both academically and politically, as it has myriad linguistic and socioeconomic impacts on many local societies, including societies traditionally considered to be non-English speaking. Previous work has studied this spread by examining a variety of indicators or phenomena relating to the diffusion of the language. For example, Fishman et al.’s (1996) systematic study examined the status of English in a certain society, such as whether it worked as an official language or whether citizens used it as a *de facto* working language in administration, education or mass media. These institution-level diffusions are a time-consuming process, during which it takes a relatively long time (e.g. several decades) for English to penetrate a specific society; thus, such a phenomenon can be deemed an indicator of the medium- to long-term diffusion of English. In contrast to this institution-level diffusion, English use frequency, the indicator on which this paper focuses, is considered to reflect relatively short-term

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**Associate Professor, School of Sociology, Kwansei Gakuin University

global and domestic changes. As the individual use of English fluctuates according to environmental conditions and individual interests and beliefs more easily than institutionalised English use, its frequency is more responsive to social changes.

This study focuses on Japan, where English has achieved almost no substantial status (Seargeant, 2009, 2011), and a tiny minority of the population speaks English (Bolton & Bacon-Shone, 2020; Terasawa, 2012, 2018a). These facts suggest that Japan has a social/institutional ‘buffer’ (Terasawa, 2018b) against English permeation. Even in this least ‘Englishised’ society, however, English use might become prevalent at a non-institutional level, such as in business or daily settings. If so, this would provide vigorous evidence supporting the power of English spreading throughout the world.

Previous work

Only a small number of social surveys have investigated English use frequency. Although needs-analysis studies have studied English use *per se* (Long, 2005), their central focus has usually been on specific groups of English users and not on estimating its average frequency in a society as a whole. Nevertheless, some needs-analysis surveys have covered a wide range of respondents. For example, Terauchi et al. (2010) and Naito et al. (2007) investigated the use of English among Japanese people, and Evans (2010) and He (2017) surveyed English use in non-English-speaking settings other than Japan. However, these surveys used convenient or web panel-based sampling, which made the representativeness of the survey samples questionable because these non-probability sampling methods could produce a huge bias when estimating behaviours and attitudes relating to English as a foreign language. As Terasawa (2021a) showed, such a sampling method is much more likely to include urban dwellers, white-collar workers and highly educated people than a probability sampling method (i.e. random sampling) is, thereby leading to an overestimation of English language use. Mitigating these risks and making valid estimates in social surveys require certain types of treatments, such as special sampling or post hoc correction. Randomly sampled surveys were analysed only by Terasawa (2013, 2014, 2018a) to estimate English use. According to his analysis of the nationally representative surveys—the Japanese General Social Surveys (JGSS)—, people who had used English at least once in the workplace in the past year accounted for 21.0% and 16.3% of the total number of Japanese worker respondents in 2006 and 2010, respectively. While these percentages are still informative, the figures estimated over a decade ago might be less relevant to the current social condition. Furthermore, Terasawa (2013, 2014, 2018a) only measured a single variable—English use in the workplace in general—but did not comprehensively examine the diverse aspects of English use.

In summary, examining English use frequency in Japan potentially contributes to the study of the global spread of English by providing insights into how the language permeates a non-English-speaking society. To date, only a few empirical studies have examined English use frequency in Japan with proper representativeness. To fill the gap is the reason why the author conducted surveys on English use.

2. Methods

2.1. Survey overview

‘The Survey of Japanese Workers’ English Use: Second Wave’ was conducted using Cross Marketing Inc.’s web panel. Responses were collected by sending each respondent a URL of the

survey page on 10-22 March 2022¹⁾. The target population was residents of Japan aged 25-64 who worked at least 20 hours per week at the time of the survey. The target sample size was 2,000. The sample comprised eight subgroups of four age levels and two gender categories, and every subgroup obtained at least 250 responses. The questionnaire included three ‘trap’ questions to detect inattentive respondents, and those violating at least one of them were excluded from the valid responses. As a result of the above procedures, 2,151 valid responses were obtained.

2.2. Questionnaire items

The questionnaire comprised eight blocks totalling 82 items. The actual questionnaire can be viewed on the author’s website (<https://terasawat.jimdofree.com/supplementary/>). Table 1 summarises the questionnaire items.

2.3. Post hoc correction

This paper estimated English use frequency based on statistical post hoc correction techniques to reduce systematic sampling bias (all estimations and corrections in this paper were obtained using statistical software, R 4.1.0). As pointed out above, this correction is essential—albeit less common in sociolinguistic surveys—when analysing non-random sampling survey data, such as web panel surveys, which involve a higher risk of overestimation or underestimation than random sampling data. Some empirical studies have shown that Japanese web panels tend to include a larger number of highly educated and white-collar workers than the Census (Honda, 2005; Kobayashi & Hoshino, 2012), and a simple, uncorrected estimation of such data causes the overestimation of English use frequency (Terasawa, 2021a). These biases were also observed in the respondents of this survey. For instance, respondents with a university degree accounted for 57% of the total respondents, which was much greater than the number shown in the 2020 Census of Japan (27%). In addition, 1.4% and 6.7% of the respondents in this dataset answered that they were able to chat in English ‘very well’ and ‘well’, respectively, compared to only 0.3% and 2.3% of respondents in the JGSS-2017G/2018G, nationally representative surveys²⁾.

The correction used in this study was a stratified weighting method with propensity scores (Lee & Valliant, 2009; Yoshimura, 2018). Specifically, we analysed a dataset that merged the present dataset with the datasets of JGSS-2017G/2018G, and then we calculated the degree to which each respondent in the present dataset was more/less common than that in JGSSs. This calculated value (i.e. a kind of sampling bias score) was used as a weight for statistical estimation³⁾. Therefore, compared to the proportion of the population, a smaller weight was assigned to respondents who were oversampled in this survey, while a larger weight was assigned to respondents who were undersampled. This

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- 1) Reviewing the results of the previous survey (i.e. the First Wave), the author thoroughly re-examined the questionnaire and conducted a pilot survey using a crowdsourcing service in February 2022.
 - 2) To ensure a fair comparison, the Census and JGSS estimates were obtained from subsamples of workers aged 25-64.
 - 3) The specific procedure for the correction was based on Yoshimura (2018). First, a logistic regression analysis was performed with nine common variables (gender, age, age squared, years of education, employment status, job type and three variables on self-reported English proficiency) set as the independent variables and with the type of survey (i.e. JGSS vs main survey) set as the dependent variable. Then, a propensity score was calculated (the accuracy indices of the regression model were $c = 0.733$, Nagelkerke pseudo- $R^2 = 0.188$, Cox-Snell pseudo- $R^2 = 0.120$). Next, the individual propensity scores were stratified and categorised into five levels. Finally, the composition ratios of respondents between the two surveys were calculated for each stratum, and these ratios were used as weights.

Table 1 Item Overview

	No. of Items	Contents (excerpt)
Demographic	5	Age; gender; education level; marital status ^(a)
Employment-related variables		
Employer-level	11	Industry; foreign owned or not; size of organisation; proportion of foreign workers; business and trade activity in the last two years ^(c)
Individual worker-level	8	Employment status; type of job; place of work; remote working experience in the past 2 years ^(c) ; annual income ^(a)
Opinions about learning English	5	Perceived need for English skills; willingness to learn English
Opinions about globalisation (beneficial vs harmful)	6	To Japanese economy ^(a,b) , employment in general ^(a,b) , environment ^(a,b) , consumers in general ^(a,b) , ones' own employment ^(a,b) , one's own consumption ^(a,b)
English skills		
Self-reported proficiency (1), a 5-point scale	3	Can read newspapers ^(b) , can chat ^(b) , can write letters ^(b)
Self-reported proficiency (2), a 4-option confidence level	8	Can listen to news; can write an email; can give a direction, etc.
TOEIC	2	The latest year during which one took the exam ^(a) ; the latest score ^(a)
Perception of Japanese people's use of English	2	Perceived number of English users ^(a) ; perceived degree of communicating with native and non-native speakers of English ^(a)
Language use in the past year (Apr 2021–Feb 2022) (retrospective)		
English use (work/life)	17	Email; reading documents; meetings; discussions; greetings etc.
Japanese language use with foreigners (work/life)	6	Discussions; exchanging texts; giving directions, etc.
Use of translation tools (work/life)	3	Text/voice translation tools
People with whom one used English	3	Native speakers of English (NSE); non-NSE; the Japanese
Language use in FY 2020 (Apr 2020–Mar 2021) (retrospective)		
English use	2	Use at work ^(c) ; use in daily life ^(c)
Japanese language use with foreigners	2	Use at work ^(c) ; use in daily life ^(c)
Use of translation tools	2	Use at work ^(c) ; use in daily life ^(c)

Unmarked: The same as in the first survey.

^(a): Newly added items in the survey.

^(b): Items identical to the JGSS.

^(c): Items largely changed from the first survey.

correction can produce much smaller estimates of English proficiency than a simple analysis without correction. In fact, these corrected estimates successfully approximated the estimates of the JGSS (Terasawa, 2021a), thus indicating the effectiveness of this correction procedure. The correction also produced much smaller values of English use frequency (Terasawa, 2021a), although its effectiveness and validity could not be empirically evaluated because there are no reference data for the current English use frequency.

3. English use frequency

3.1. Questionnaire items

The survey asked the respondents about their experiences with 26 types of cross-linguistic communication (see Table 2).

We would like to ask you about your use of English and other languages [at work/in your hobbies or daily life]. In the past year, how often have you done the following? Please choose the one that best describes you.

For each type of use, respondents chose one of the six options listed below.

- Several times a week or more
- About once a week
- About once a month
- About several times a year
- About once a year
- Never

This paper coded these options in two ways: (1) the average number of uses per year⁴⁾ and (2) the percentage of users (i.e. the percentage of people who used English at least once a year).

3.2. English use in 2021

Table 2 presents the corrected estimates of English use frequencies (the average number of times and the ratio of users) for 26 types of use. A general finding was that receptive skills (reading and listening) were twice as likely to be used as productive skills (speaking and writing), and the Japanese language was used more often for international communication than English. The second finding probably reflects the linguistic landscape in Japan, in which the vast majority of foreigners in Japan (foreign tourists, workers, students, and residents) are non-native speakers of English and many of them have at least some level of Japanese fluency (Go, Brandon Saure, Kuruu, & Macalinga Borlongan, 2021; Kubota & McKay, 2009; Ostheider, 2012). This might suggest that, in Japan, Japanese serves as a language for international communication more often than English (Aoyama et al, 2020).

4) Each option was coded to the number of uses per year and a mean value was calculated. Note that ‘several times’ was coded as 3.0. ‘Several times a week or more’ was also coded in this manner (i.e. $3.0 \times 1/7 \times 365 = 156.4$ times per year).

Table 2 Experience in International Communication in 2021

	Times Per Year	SD	Ratio of Users (%)
English use			
Work: Email	5.42	25.36	12.29%
Work: Write	3.63	21.12	8.62
Work: Read documents	7.23	29.49	18.80
Work: Face-to-face meeting	1.65	12.93	5.48
Work: Face-to-face discussion	1.45	12.97	4.08
Work: Face-to-face greeting info	3.45	19.28	14.61
Work: Online meeting	1.67	13.15	4.86
Work: Online discussion	1.21	11.23	3.83
Work: Online greeting/info	1.72	13.30	5.82
Life: Email	1.88	13.63	9.09
Life: Write	2.32	15.75	10.05
Life: Read	5.77	24.68	21.39
Life: Listen	12.77	36.38	33.86
Life: Learn	5.11	23.53	10.95
Life: Travel abroad	0.56	6.39	3.87
Life: Talk face to face	1.46	11.95	5.95
Life: Talk online	1.02	10.19	3.74
Japanese use			
Work: Discussion	9.64	33.50	19.25
Work: Greeting information	16.00	43.14	31.75
Work: Written communication	5.65	25.97	11.93
Life: Talk with acquaintances	4.87	23.34	13.56
Life: Talk with strangers	1.56	11.27	11.08
Life: Written communication	2.24	15.30	8.15
Tools			
Work: Interpreting (voice translation) tools	2.14	15.02	9.30
Work: Translation (text translation) tools	7.80	29.00	22.79
Life: Translation/interpreting tools	6.82	27.06	22.11
People with whom one used English			
Work: w/ native speakers of Eng.(NSE)	3.20	18.26	12.52
Work: w/ non-NSE	3.81	20.73	12.59
Work: w/ Japanese people	2.06	15.33	6.14

In addition, the total percentages of English users were as follows:

- 29.4% of respondents used English at work (i.e. chose at least one option for English use at work)
- 42.6% of respondents used English in daily life
- 51.3% of respondents used English in both settings

These percentages can be compared with the English use frequency in 2006 and 2010, estimated from the JGSS datasets (Terasawa, 2014, 2018a), although the difference should be cautiously interpreted taking into account the fact that this survey and JGSSs were substantially different in sampling, questionnaire wordings and estimation methods (the present survey, which asked in greater detail, would evoke the memory of one's language use experience more than the JGSSs; thus, this dataset might have produced higher values than the JGSS). The comparison showed that there were around 10 percentage points more English users in 2021 (29.4%) than in 2006 and 2010 (21.0% and 16.3%), which suggests that, although the demand for English use might have been somewhat boosted during the past decade, the increase seems less dramatic than what some hyper-globalist or 'Englishisation' discourses expected (Mikitani, 2012; Terasawa, 2018b).

3.3. Comparison with 2020

The present survey had the same items regarding English use frequency as the previous survey (conducted in March 2021), which allows a direct comparison between the two time points. In addition, the previous survey also investigated English use at two time points (2019 and 2020), collected with a retrospective question. Therefore, changes between the three time points (i.e. 2019 → 2020 → 2021) can be examined.

Figure 1 illustrates these changes. In the figure, the symbols ○, ■, and ● indicate the average use frequencies in 2019, 2020 and 2021, respectively. Arrows are depicted towards the 2021 symbols; a right-pointing arrow indicates an increasing trend, while a left-pointing arrow indicates a decreasing trend, and the length of a line segment indicates the magnitude of change between the two time points. However, although the 2019, 2020 and 2021 estimates were all obtained from an identical correction procedure (elaborated in Note 3), their original responses were collected through slightly different techniques. The English use in 2019 was elicited from a retrospective question that asked respondents to think back to the two years before, which may have brought about a stronger recall bias (Dex, 1995) than the English use in 2020/2021 elicited from respondents' past one-year experience. In addition, the sample compositions might have differed between the 2019/2020 and 2021 estimates, although they probably did not differ significantly because the two surveys used the web panels of an identical research company (Terasawa, 2021a, 2021b) and were adjusted through a correction method for balancing sample proportions.

As Figure 1 shows, an obvious decrease was observed only in English communication in daily life settings, whereas other language use frequencies remained at the same level or increased. These findings are consistent with those of Terasawa (2022), who empirically revealed that the COVID-19 pandemic did not generally curb international communication opportunities, despite it severely curtailing the transnational mobility of people. This finding does not seem strange given the remarkable post-outbreak developments in online communication technologies that have overcome mobility restrictions (Dong, 2021).

The overall percentages of English users from 2019 to 2020 to 2021 were as follows:⁵⁾

- For work: 24.6% → 27.0% → 29.4%

5) Although not affecting interpretation, the 2019/2020 estimates in this paper differed slightly from the author's previous estimates (Terasawa, 2022). This difference was due to the different datasets used to calculate the correction weights. Terasawa (2022) did not have access to JGSS-2017G/2018G at the time of analysis (October 2021) and thus used JGSS-2008 instead.

- For life: 42.2% → 41.4% → 42.6%
- For both (work/life): 47.7% → 47.8% → 51.3%

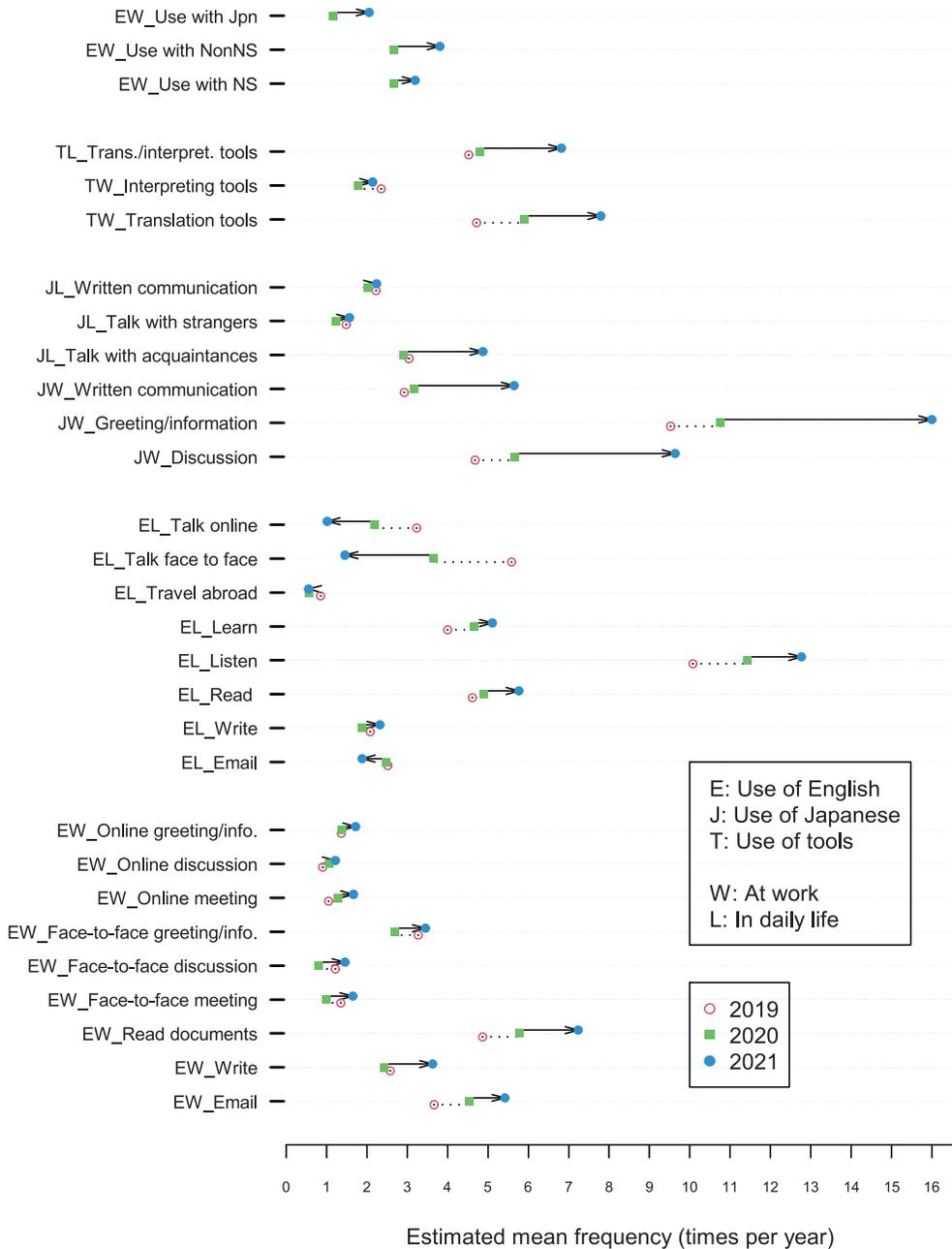


Figure 1 Changes in the Language Use Frequencies, 2019-2021

4. Perceived number of Japanese users of English

The next research question is to what extent the actual English use frequency deviated from the

perceived frequency. There is considerable evidence indicating that the demand for English use in Japan tends to be overestimated compared to the actual level. Such an overestimation can be observed in some policy documents by the Ministry of Education, Culture, Sports, Science and Technology (see Terasawa, 2014, 2018a), papers authored by English language teaching researchers (see Terasawa, 2018b) and business discourses (see Naruke, 2011). This observation appears plausible given that current globalisation (or, more precisely, the exaggerated image of globalisation) has boosted the perceived demand for English use. It is still an open question, however, whether such a divergence has actually occurred and, if so, to what extent. This question can be empirically examined using the dataset of the present survey, as it investigated both the actual and perceived frequencies.

The survey asked about the perceived number of Japanese users of English as follows:

What percentage of adult Japanese do you think currently use English *at work*? Please select the percentage of those who use English *regularly* (e.g. *several times or more per week*) that most closely matches your image. (My translation from Japanese; emphasis in the original.)

The respondents selected a percentage by moving a slider on the web form (from 0% to 100% in 1%-point increments). As indicated by the wording stressing regular use in the workplace, this variable measured a much narrower use than the general sense of English use. However, for convenience, this paper termed this the ‘perceived English use frequency’.

The actual web questionnaire randomly presented this item either before or after the items on language use experience. The positioning of the question was crucial for mitigating carryover effects, in which the earlier questions (wordings or memories evoked by them) affected the responses to the latter questions. This effect also seemed to occur in this survey, as respondents who answered the perceived English use frequency question *after* answering about their actual experience selected a higher option of the perceived frequency than respondents who answered it *before* answering about their actual experience (the difference between the two groups was 3.2 percentage points. $p < .001$). This finding indicated the workings of the carryover effects, that is, the questions about their experience might have evoked a memory and raised the awareness of English use among the Japanese. However, this survey randomly assigned either a perception-first form or an experience-first form to each respondent to help mitigate the effect—in other words, the estimates obtained in this survey were the average values between the two forms.

As a result of the statistical estimation with correction, the mean percentage of perceived English use frequency was 22.9%. This figure was in stark contrast with the actual frequency, which showed that only 5.8% or 7.9% selected ‘several times a week or more’ or ‘once a week’ for at least one of the nine ‘English use at work’ items. This difference indicated that the Japanese tended to envisage English use as being much more prevalent in society than it really was. The extent of this overestimation is better illustrated in Figure 2, which depicts the distribution of perceived English use frequency. Less than 3 out of 10 respondents precisely estimated or underestimated the frequency of English use by choosing between 0% and 10%. This finding that the vast majority tended to overestimate English use frequency supports the previous work mentioned earlier (Naruke, 2011; Terasawa, 2014a; 2014b; 2018). This finding also raised another question about the factors that contributed to this overestimation, which are examined in Section 7.

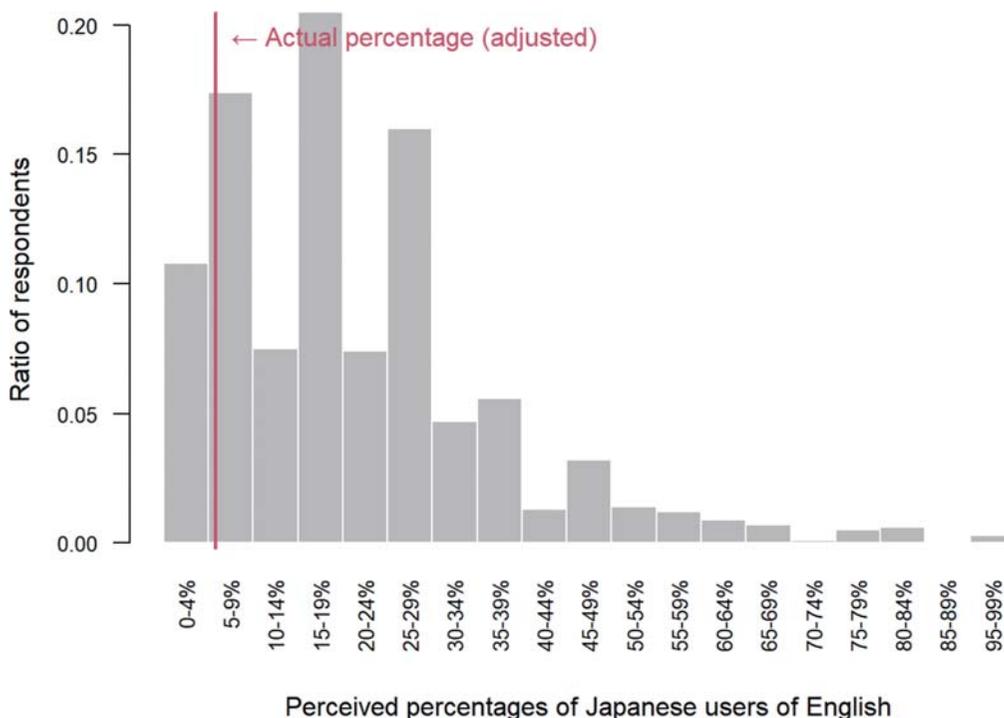


Figure 2 Distribution of the Perceived Number of Japanese Users of English

5. A view of English:

A tool for communicating with native speakers of English (NSE) vs non-NSE?

As English has long been regarded as an international language (Crystal, 2003) or a lingua franca (Seidlhofer, 2011), it has been widely recognised that there is a growing opportunity for Japanese people to use the English language not only with NSE but also with non-NSE (Konakahara & Tsuchiya, 2020). On the other hand, given that the native-speakerism held by Japanese people has sometimes been criticised (Houghton et al., 2020; Houghton & Hashimoto, 2018; Houghton & Rivers, 2013; Kubota & McKay, 2009), the Japanese view of English might be substantially biased in viewing English as a tool for communicating with NSE rather than with non-NSE. Academic discussion on native-speakerism, originating from Holliday (2006), seems to be mainly concerned with problematising normative claims, such as the claim that English should be best taught by NSEs or that learning materials should obey an NSE norm. However, such normative claims are probably predicated somewhat upon a factual perception that communication opportunities with native speakers are more common or typical. Therefore, what people perceive as a reality of English communication can be problematised and examined as a component of native-speakerist ideology.

A question is, then, how much more common is it for Japanese people to experience English communication with non-NSEs than with NSEs? Regarding this issue, the survey had two items: behaviour and perception. Behaviour items, as already shown in Table 2, were the frequencies of English use that respondents actually experienced with NSEs or non-NSEs. A perception item was how frequently they thought that Japanese people used English with NSEs and non-NSEs. A

comparison of the two types of variables allowed us to examine the discrepancy between the actual use and perceptions of English as a tool for international communication.

The perception variable was a response to the following item:

Which of the following images, A or B, is closer to your image of English communication by Japanese people? Please choose the one that best describes your image of *Japanese people as a whole*, rather than your own experience.

A: Communicating with native speakers of English (for example, people from the UK or the US).

B: Communicating with non-native speakers of English.

- A is much more often
- A is more often
- A is somewhat more often
- B is somewhat more often
- B is more often
- B is much more often

(My translation; emphasis in original).

The perception variable was identified as a continuous variable, ranging from ‘6 = A (i.e. with NSEs) is much more often’ to ‘1 = B (i.e. with non-NSEs) is much more often’ (and a theoretical median is 3.5). Therefore, a higher value denoted a person who identified English more strongly as a communication tool with an NSE than with a non-NSE. As a result of the estimation (with correction), the mean of this variable was 3.38 (SD = 1.37), which suggested that the average perception among Japanese people lay at the midway point between the contrasting views of English communication. This finding indicated that Japanese people were aware of English as an international language or *lingua franca* to some extent.

This interpretation, however, changed when the perception mean was compared to the behaviour variable (see Figure 3). For a fair comparison, this behaviour variable needed to be recoded. To do so, first, the number of times that each respondent communicated with NSEs was obtained, and this was divided by their total number of communications (a sum of communications with NSEs and non-NSEs) to calculate the ratio of communicating with NSEs (however, respondents whose overall frequency was smaller than 12 times per year were excluded to avoid extreme values). Next, according to the ratios, each respondent was categorised using a six-point scale: 1 = ‘0.00%-16.66%’, 2 = ‘16.66%-33.33%’, 3 = ‘33.33%-50.00%’, 4 = ‘50.00%-66.66%’, 5 = ‘66.66%-83.33%’ and 6 = ‘83.33%-100.00%’. This six-point variable was regarded as the degree of opportunity for actual communication with NSEs. For this behaviour variable, a maximum value was 6.0, a minimum value was 1.0, a theoretical median was 3.5 and a larger value denoted a larger ratio of communication with NSEs to communication with non-NSEs. These characteristics were in line with the perception variable, which made it possible to compare the two.

The mean of the behaviour variable was estimated as 2.77 (with correction)⁶⁾, which was 0.61

6) This variable contained many values at a boundary between two categories (e.g. 16.6666...). Classifying them into a lower category (e.g. 1 = ‘0.00%-16.66%’) or an upper category (e.g. 2 = ‘16.66%-33.33%’) inevitably resulted in substantial differences in estimation. Therefore, the mean value in this section was estimated by adding minimum noise ↗

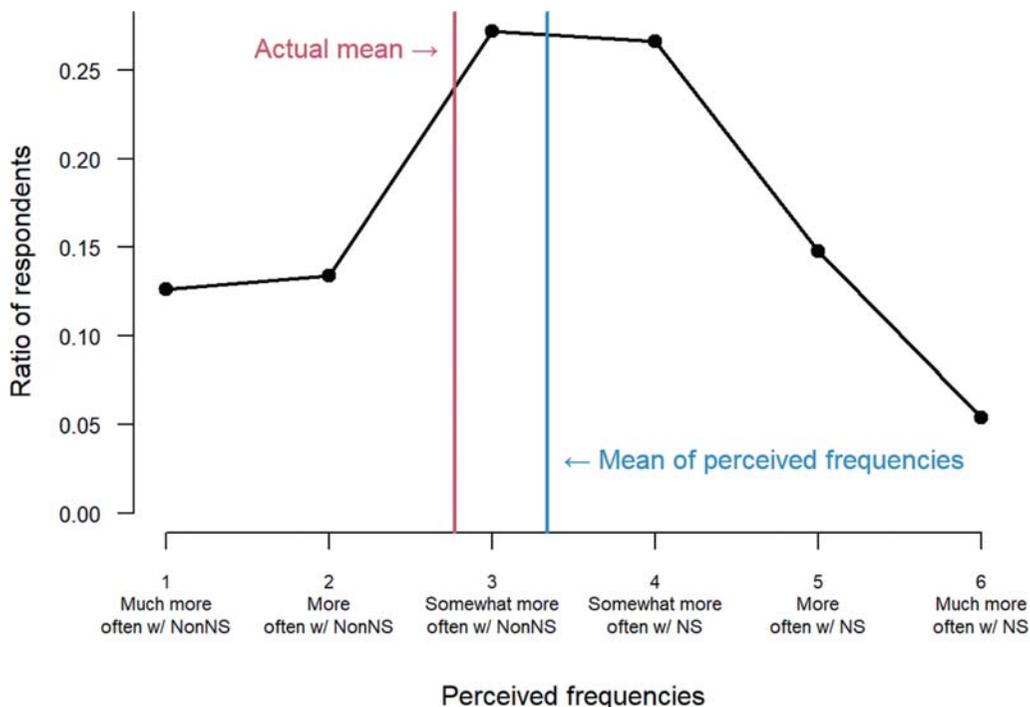


Figure 3 Distribution of the Perceived Frequencies of Communicating with NSEs and non-NSEs

points lower than the mean of the perception variable (3.38). This finding indicated that the Japanese tended to overestimate the opportunities for English communication with NSEs. However, the bias was not so large. Figure 3, which depicts the distribution of the perceptions, illustrates that only a minority of the respondents (less than 30%) expressed an extreme view that English was used predominantly for communication with NSEs. This result seems to suggest that Japanese people may have had many opportunities to develop a somewhat balanced view of the international language, although their native-speakerist view has since been problematised by the previous work raised above. It seems generally well-known that there is a much larger non-NSE population than NSEs in the world (Bolton & Bacon-Shone, 2020; Crystal, 2003), and the Japanese have more chances of communicating in English with non-NSEs than with NSEs because Japan has welcomed a huge number of foreign visitors, especially from East Asia (mainly before the COVID-19 outbreak).

6. TOEIC score

The survey also examined the respondents' English language proficiency. As shown in Table 1, the respondents' subjective levels of English skills were investigated using eleven items, three of which were identical to those in JGSS 2017G/2018G and eight of which were original. Their TOEIC scores were also investigated as an objective indicator of their English skills.

As the TOEIC is one of the most influential standardised English language tests in Japan (Toh, 2013; Torikai, 2002), it is worth examining the experiences and scores of Japanese people. According

↘ to each value. This procedure was repeated 5,000 times, and then these mean values were integrated.

to a report issued by the Institute for International Business Communication (IIBC), the administrator of the TOEIC, the average score of recent test takers is around 600 (588, 620 and 611 in 2019, 2020 and 2021, respectively) (IIBC, 2022). Regrettably, however, the average TOEIC score is often abused. Despite the fact that TOEIC test takers never represent the Japanese population as a whole, a plethora of authors and even some bureaucrats (e.g. Ministry of Education, Culture, Sports, Science, and Technology, 2022) have cited it to make inappropriate international comparisons. Those who have taken the test are generally more familiar with English learning than those who have not; thus, it is naturally expected that if all Japanese people were to take the test, the average score would be much lower. This survey also showed that those who have taken the test are a minority (31.2%), while the majority (68.8%) do not hold a TOEIC score. Therefore, calculating a mean score based solely on the score holders would inevitably produce a tremendous bias (i.e. overestimation). To estimate a national level of English proficiency thus requires some statistical treatments that enable the inclusion of non-test-taker respondents whose TOEIC score is so-to-speak ‘a missing value’. This paper used a multiple imputation (MI) method to estimate these missing values.

MI is a method of analysing a sample with some missing values. These missing values are complemented with (tentative) values estimated from other existing variables (‘multiple’ means that this complementation takes place multiple times). In the MI procedure in this study, each missing TOEIC score was complemented with the values estimated from 11 variables of self-reported English proficiency (continuous variables), two variables of English use (work/life, binary), age, gender, years of education, three variables of English learning motivation (see Section 7), and two variables of perceived English usefulness (see Section 7)⁷⁾. This tentative estimation was considered reliable because every respondent answered all 11 items of perceived English proficiency (without any missing values), which had considerable predictive power (their correlations with TOEIC scores ranged from Pearson’s $r = 0.54$ to $r = 0.61$). Note that, as 429 respondents (63.9% of the total test takers) last took the test five or more years ago, their scores were unlikely to help in estimating their current English language proficiency, so they were also treated as missing values. Note also that respondents did not answer their specific score but chose one of the 16 options with a 45-point score range (‘700-745’, ‘750-795’, ‘800-845’, etc.). The following calculation used a theoretical median of each score range (e.g. ‘700-745’ = 722.5), which likely caused a certain amount of a round-off error.

The MI-estimated mean score (with correction) was 445 (SD = 144)⁸⁾. This figure, however, should not be regarded as definitive, as its estimated value fluctuated theoretically and actually depending on the random number used as well as an estimation model. Furthermore, approximately 90% of the cases were treated as missing values for the TOEIC score item, which made it slightly questionable whether this degree of missing values allowed for accurate estimation. Nevertheless, this result is still important because this estimated score (i.e. 445) was more than 100 points lower than the average score reported in the IIBC report (around 600; see above) as well as the average score of 573 calculated from the test-taker sample (those who took it within five years; the value was corrected)⁹⁾. This finding empirically supports the idea that calculating the raw data of TOEIC scores can produce a

7) For estimation, the author used `mice::mice()` function (ver 3.14.0). Specifically, predictive mean matching was used. The number of iterations was 20. The results across the 50 imputed datasets were integrated.

8) This SD value was a median of 50 SDs calculated from the MI method with correction. An uncorrected, MI-estimated mean score was 517.

9) An uncorrected mean was even higher at 656.

huge bias unless treated properly, which suggests the need for caution regarding the representativeness of average TOEIC scores.

7. Factors affecting English use frequency and other variables

This section focuses on the relationship between the variables examined so far and other factors. Specifically, it examines how several predictors—demographic factors, English proficiency, opinions on globalisation, and English use—explain the following seven dependent variables.

- (1) Experience of English use at work (binary)
- (2) Experience of English use in daily life (binary)
- (3) Willingness to learn English (4-point scale¹⁰⁾)
- (4) Perceived usefulness of English skills in their jobs (5-point scale¹¹⁾)
- (5) Perceived usefulness of English skills in their lives (5-point scale¹²⁾)
- (6) Perceived frequency of communicating in English with NSEs (6-point scale; identical to the variable examined in Section 5)
- (7) Perceived percentage of English users among the Japanese (0-100¹³⁾; identical to the variable examined in Section 4)

Models (1)-(2) were estimated using a logistic regression model and models (4)-(7) were estimated using an ordinary least squares regression model¹⁴⁾.

The predictors are described in detail as follows. The demographic variables consisted of generation with five age groups ('20s', '30s', '40s', '50s' and '60s'), gender (male = 1, other = 0) and education level¹⁵⁾. A variable for English language proficiency was a factor score derived from a factor analysis (using a maximum likelihood method, with the number of factors being 1) of the eight items of perceived English proficiency¹⁶⁾. For opinions on globalisation, items on positive/negative attitudes towards six different aspects of globalisation¹⁷⁾ were integrated into one indicator by transforming the

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- 10) In response to 'Are the following statements true or false to you?—I am planning to learn English this year', the respondents chose one of four options: 4 = Completely true, 3 = Somewhat true, 2 = Somewhat false, 1 = Completely false.
 - 11) In response to 'To what extent do you think that improvement in English proficiency is of advantage to your job?', the respondents chose one of five options: 5 = To a great extent, 4 = To some extent, 3 = A little, 2 = Hardly, 1 = Never.
 - 12) In response to 'To what extent do you think that improvement in English proficiency is of advantage to your hobby or personal relationships?', respondents chose one of the five options identical to those in Note 11.
 - 13) Theoretically, a percentage as a dependant variable requires a logit (or other) transformation. However, since this model with a logit transformation and the model without it produced almost identical patterns and the latter model was easier to interpret than the former, this paper employed the latter model.
 - 14) Although the sample correction weights used throughout this paper were given to the ordinary least squares regression models, they were not given to the logistic regression model due to practical difficulty; in other words, weights = 1.00 were given to every respondent in the logistic models.
 - 15) University graduates who did not finish graduate school were split into two groups based on their perceived competitiveness of their undergraduate entry. Respondents who evaluated the competitiveness of their entrance exams as 'Very high' or 'Somewhat high' were categorised as 'perceived as competitive', while those who chose 'Not high' or 'Don't know' were categorised as 'perceived as uncompetitive'.
 - 16) The Cronbach's alpha of these eight variables was 0.96.
 - 17) The Cronbach's alpha of these six variables was 0.91. They had some missing values, and a mean value rather than a factor score was calculated.

six items into continuous variables with larger values indicating more pro-globalisation, standardising them and calculating their mean value. For English use, binary variables of whether respondents experienced English use at work and in life were used.

Table 3 presents the regression estimation results. Roughly speaking, the seven dependent variables could all be seen as proxies reflecting positive attitudes or behaviours regarding the English language, but they also showed considerably different effects. The following paragraphs focus on each predictor rather than each model and comprehensively discuss how each predictor was associated with English use frequency and other variables.

First, age/generation exhibited a contrasting pattern of effects depending on the dependent variables. Generally speaking, older respondents were more likely to use English but were less willing to learn it or perceive its skills as less useful. This finding is partly consistent with previous work (Terasawa, 2018a), which showed that English use *at work* was more common among those in their 30s and 40s than among those in their 20s or in their 50s-60s (probably due to their occupational demand), and that English use *in daily life* was more common among younger respondents (probably due to the general tendency in which younger Japanese people are more educated than those older). Although these different findings seemed rather hard to reconcile, some factors originating from a web panel might have caused the difference. Specifically, the older respondents in this survey might have had more peculiar and unique dispositions that could not be balanced by the correction techniques used in this study than the general population. In contrast to the effects on English use, the negative effects of age on attitudinal factors, such as willingness to learn and perceived usefulness, are consistent with previous work (Terasawa, 2018a). Furthermore, age seemed to have little effect on the perceptions regarding communication opportunities with NSEs/non-NSEs and the number of Japanese users of English.

As for the gender effect, men were more likely to use English and less willing to learn it, which is consistent with previous work (Terasawa, 2018a). Furthermore, men tended to estimate fewer English users.

The effect of one's education level was complicated. It was easy to interpret the effects of education level on the two perception variables regarding communication with NSEs and English users (in both cases, the highly educated estimated them to be lower). However, the other dependent variables did not exhibit statistically significant effects, or if there were any, they showed an inconsistent pattern. The effect of English proficiency, on the other hand, was quite simple—it had significant positive effects on all of the dependent variables except the perceived opportunities of communicating with NSEs. This effect of English proficiency was convincing because it seemed natural that being proficient in English would be closely associated with positive attitudes and behaviours regarding English. By contrast, the effect of one's education seemed unexpected because education level has generally been found to be one of the most powerful predictors for various behaviours and attitudes related to foreign language learning (Rivers et al., 2013; Robinson et al., 2006a, 2006b; Terasawa, 2018a). One possible explanation for this would be that the education effect was absorbed into the effect of English proficiency, which had greater explanatory power than education. In fact, the model that excluded the English proficiency variable from the original models exhibited significant effects of education in all of the models (note that this model is not included in Table 3).

The effects of positive attitudes towards globalisation were more straightforward. Significant

Table 3 Factors Affecting English Use Frequency and Other Variables

	(1) Use: work	(2) Use: life	(3) Willingness to learn English	(4) Useful: work	(5) Useful: work	(6) Native speakers	(7) % of users
(Intercept)	-0.95*** (0.20)	-0.09 (0.20)	-2.57*** (0.08)	-3.69*** (0.10)	-3.67*** (0.10)	-3.76*** (0.13)	24.92*** (1.50)
Age: 20s (ref.)							
30s	0.23 (0.20)	0.17 (0.20)	-0.07 (0.08)	-0.15 (0.11)	-0.09 (0.11)	0.22 (0.13)	0.89 (1.49)
40s	0.19 (0.21)	0.45* (0.20)	-0.16 (0.08)	-0.32** (0.11)	-0.22* (0.10)	0.17 (0.13)	1.94 (1.48)
50s	0.34 (0.20)	0.34 (0.20)	-0.19* (0.08)	-0.28** (0.11)	-0.18 (0.10)	0.17 (0.13)	1.19 (1.47)
60s	0.53* (0.25)	0.69** (0.24)	-0.17 (0.10)	-0.19 (0.13)	0.04 (0.13)	0.20 (0.16)	2.24 (1.82)
Gender: Other = 0 Male = 1	0.49*** (0.11)	0.26* (0.11)	-0.11** (0.04)	0.01 (0.05)	-0.07 (0.05)	-0.05 (0.06)	-4.27*** (0.73)
Education level							
Junior or senior high (ref.)							
Two-year college or <i>kosen</i>	0.04 (0.18)	0.09 (0.17)	0.02 (0.06)	0.05 (0.07)	0.06 (0.07)	-0.06 (0.09)	-1.69 (1.03)
University perceived as competitive	0.15 (0.15)	-0.12 (0.15)	-0.14* (0.06)	-0.06 (0.08)	-0.17* (0.08)	-0.04 (0.10)	-3.77*** (1.09)
University perceived as uncompetitive	-0.02 (0.15)	-0.01 (0.14)	-0.05 (0.05)	0.01 (0.07)	0.02 (0.07)	-0.25** (0.08)	-2.69** (0.94)
Graduate school	1.10*** (0.24)	0.41 (0.25)	0.04 (0.11)	0.30* (0.15)	-0.09 (0.15)	-0.32 (0.18)	-5.67** (2.06)
English proficiency	1.20*** (0.07)	1.37*** (0.08)	0.51*** (0.03)	0.54*** (0.04)	0.59*** (0.04)	-0.08 (0.05)	1.44* (0.60)
Pro-globalisation attitudes	0.14* (0.07)	0.15* (0.07)	0.21*** (0.02)	0.33*** (0.03)	0.31*** (0.03)	0.15*** (0.04)	0.81 (0.42)
Have used Eng. at work = 1						-0.04 (0.08)	3.82*** (0.86)
Have used Eng. in life = 1						0.08 (0.07)	0.36 (0.79)
AIC	2163.51	2224.34					
BIC	2230.89	2291.72					
Log Likelihood	-1069.76	-1100.17					
Deviance	2139.51	2200.34					
Number of observations	2028	2028	2028	2028	2024	2028	2028
R^2			0.21	0.19	0.20	0.02	0.05
Adjusted R^2			0.20	0.18	0.19	0.01	0.05

*** $p < .001$; ** $p < .01$; * $p < .05$.

Upper rows: Regression coefficients

Lower rows with parentheses: Standard errors

positive effects were found for all models, except for the effect on perceived English use frequency. In other words, those who were generally optimistic about globalisation were more likely to show positive attitudes and behaviours regarding English than those who were pessimistic about globalisation. As Steger (2020) elaborated, globally oriented attitudes and behaviours (including English learning) cannot always be identified as optimism towards globalisation (i.e. hyper-globalist attitudes in Steger's term) but can be associated with anti-globalisation (Steger cited some global justice movements to support this claim). At a theoretical level, therefore, the connection between pro-globalisation and English learning is not necessarily self-evident, but the analyses in this section exhibit the results that support this connection.

The sixth and seventh models incorporated the predictor variables of English use. The results showed that only English use at work had a positive impact on the perceived number of English users. This was understandable given that human beings tend to generalise a limited number of observations of events (which often took place around them) to society as a whole (known as Kahneman's (2012) law of small numbers). In other words, Japanese users of English tended to generalise their experiences of using the language to the Japanese population. This cognitive bias, however, was not necessarily powerful because the regression coefficients ($b = 3.82$) indicated that only about a four percentage point difference was observed in the estimations between respondents with English use experiences and those without them.

8. Summary and conclusion

This section summarises the findings so far. The frequencies of international communication behaviour (i.e. English use, Japanese use with foreigners, and use of translation tools) varied depending on the use type and ranged from an average of 0.6 to 16.0 times per year and from 3.7% to 33.9% in terms of the ratio of experience. Generally speaking, receptive skills were used more often than productive skills, and the Japanese language was used more often for international communication than English. Furthermore, the changes in use frequencies have generally remained at the same level or increased slightly over the past two years. This finding suggested that the demand for English use in Japan was less affected by the pandemic in the past two years than expected, despite the large-scale decline in face-to-face contact in international communication. As Terasawa (2022) discussed, online international communication has been common for many years (e.g. email) or since shortly after the outbreak (e.g. online conferencing systems), and these communication technologies have likely maintained the demand for English use.

Another finding was that Japanese people tended to overestimate the number of Japanese users of English as well as the frequency of communicating with NSEs. Their perceived frequencies were found to be higher than the actual frequencies estimated in this study, which suggested the workings of some types of ideologies. For example, globalist and global language ideologies might urge us to believe that global communication in English is more widespread than it really is, and native-speakerist ideologies might compel us to perceive communication with NSEs as more common than communication with non-NSEs.

Using a multiple imputation method, this paper estimated the average TOEIC score of the Japanese population as a whole (to be more exact, the Japanese workers between the ages of 26 and 64) to be approximately 440. As discussed above, this figure might have easily changed using

different estimation methods and models, but an important implication of this figure was that it took into account not only test takers but also non-test-takers and that the estimated figure was found to be much lower than the average TOEIC scores that are circulated in public discourses (e.g. the average scores issued in the IIBC reports). This implication also suggested a need for caution regarding the representativeness of the average scores of language tests and indicators in general. The average scores of other language tests, such as TOEFL and the EF English Proficiency Index, are also sometimes mistakenly generalised to a national level of English proficiency. Moreover, as many scholars (e.g. Bolton & Bacon-Shone, 2020) have criticised, these pseudo-national scores of English proficiency are misused and abused for international comparison and circulated in media, policy and public discourses, and sometimes even academic discussion. The above discussion indicated that an average score for non-representative language tests should be analysed with great caution and that methodological treatments are needed to correct the score.

Finally, the behaviours and perceptions about the English language discussed above were found to be influenced by a variety of demographic and attitudinal factors. English proficiency and pro-globalisation attitudes showed particularly simple effects, whereas age, gender and education level exhibited some complex effects.

This paper is a research report and did not examine a small number of research questions derived from a specific theory; rather, it presented as many implications that the survey data suggested as possible. Future research will examine some of the findings presented in this paper using a more theoretically and methodologically sophisticated approach.

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How Do Japanese Workers Experience and View International Communication?: A Web-based Questionnaire Survey

Takunori TERASAWA

ABSTRACT

This paper presents the general findings of ‘The Survey of Japanese Workers’ English Use: Second Wave’, conducted by the author in March 2022. The results are as follows: (1) The frequencies of international communication behaviour (English use, Japanese use with foreigners, and use of translation tools) ranged from an average of 0.6 to 16.0 times per year and from 3.7% to 33.9% in terms of the ratio of experience. (2) Despite the impact of the COVID-19 pandemic on international mobility, the frequencies of international communication generally remained at the same level or increased slightly from 2019 to 2021. (3) Japanese people were inclined to overestimate the number of Japanese users of English and the frequency of communicating with native speakers of English. This suggests the workings of globalist and global language ideologies as well as native-speakerist ideologies. (4) The average TOEIC score among Japanese workers as a whole (including non-test-takers) was estimated at approximately 440 via a multiple imputation method. (5) Behaviours and perceptions about the English language (e.g. English use frequency, positive attitudes toward English learning and the view of English use among Japanese people) were influenced by various demographic, behavioural and attitudinal factors. For example, English proficiency and pro-globalisation attitudes showed straightforward effects, whereas age, gender and education level exhibited some complex effects.

Key Words: Japanese workers, international communication, web survey