

# Reliability and validity of a Japanese version of the Ten Item Personality Inventory (TIPI-J)

## INTRODUCTION

Big Five and Five-factor Model are popularly-used sets of personality structure in Japan. Aoki (1971) was one of the first to collect and assemble Japanese words relating to personality. Some other researchers continued to do lexically-based analysis of personality structures in Japan after that (e.g., Kashiwagi, Tsuji, Fujishima, & Yamada, 2005; Kashiwagi, Wada, & Aoki, 1993; Murakami, 2003; Wada, 1996). Although there exist a number of inventories to assess Big Five structures, these inventories tend to have many items, and it, thus, takes a great deal of time to rate each of them. An easy-to-use and well-validated scale of the Big Five is needed.

Gosling, Rentfrow, and Swann (2003) have developed an extremely brief measure of the Big-Five personality dimensions called the Ten-Item Personality Inventory (TIPI). The TIPI has been translated into various languages. Its use is widespread and extends well beyond the field of psychology.

This study examines the reliability and validity of the TIPI in the Japanese context (TIPI-J). The TIPI uses ten items to assess the five personality dimensions. Each of the five dimensions that make up personality are represented by two of the items in the TIPI. Accordingly, if the correlation of each pair of items is quite high, they assess a limited range of construct. That is a problem known as a “bandwidth-fidelity-trade-off” (Cronbach & Glesser, 1965). This study focuses not only the internal consistency but also test-retest reliability. The validity is explored with regard to both the relationships with other existing big five scales and relations between self-rated and friend-rated TIPI-J scores.

## METHOD

### Participants

data set	N	male	female	memo
Data 1	802	322	480	Japanese undergraduates rated TIPI-J
Data 2	149	44	105	Test-retest at intervals of two weeks
Data 3	185	54	131	FFPQ-50, BFS, and TIPI-J
Data 4	122	71	51	BFS-S and TIPI-J
Data 5	216	70	146	Big Five and TIPI-J
Data 6	62	62	0	Thirty-one pairs of friends rated the TIPI-J each other.

### Materials

*TIPI-J*. We translated the TIPI into Japanese after getting permission. Five preliminary researches were conducted to fix the expression of Japanese. it was administered using a 7-point scale.

*FFPQ-50*. Fifty items version of Five Factor Personality Questionnaire (Fujishima, Yamada, & Tsuji, 2005) was used to explore the validity the TIPI-J. It was administered using a 5-point scale.

*BFS*. Big Five Scales (Wada, 1996) was used. The BFS has sixty adjectives. It was administered using a 7-point scale.

*BFS-S*. Short version of the BFS developed by Uchida (2002) was used. It contains 20 items.

*Big Five*. The Big Five (Murakami & Murakami, 1999) contains seventy items, 18 of them assess response bias. It was administered using a 2-point (Yes / No) scale.

## RESULTS

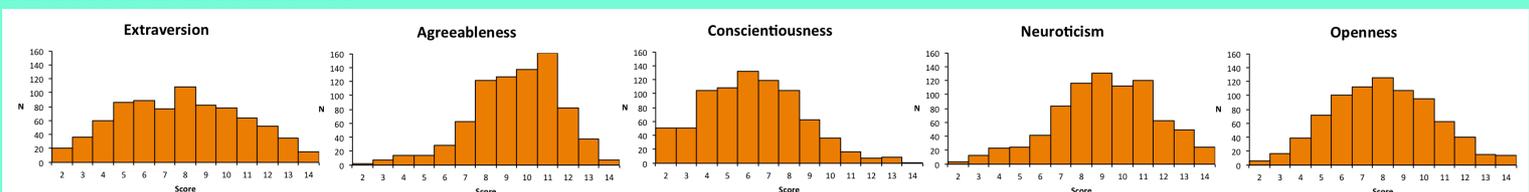
### Internal consistency

Correlation coefficients of the pair of items were as follows:  $r = -.58$  (Extraversion),  $r = -.23$  (Agreeableness),  $r = -.37$  (Conscientiousness),  $r = -.28$  (Neuroticism), and  $r = -.39$  (Openness). These results indicated a low internal consistency of the TIPI-J. However, low correlation coefficients are also thought to be desirable for covering a broad range of meanings of the Big Five personality constructs.

### Test-retest reliability

The test-retest correlations at intervals of two weeks were as follows:  $r = .86$  (Extraversion),  $r = .79$  (Agreeableness),  $r = .64$  (Conscientiousness),  $r = .73$  (Neuroticism), and  $r = .84$  (Openness). These results indicate the sufficient level of reliability of the TIPI-J.

### Distribution of each score



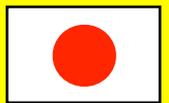
M = 7.81, SD = 2.95

M = 9.47, SD = 2.16

M = 6.23, SD = 2.40

M = 9.18, SD = 2.48

M = 8.01, SD = 2.49



### Convergent correlations between the TIPI-J and other Big Five scales

Convergent correlations between the TIPI-J and other existing Big Five scales are shown in the next Table. All convergent correlations are higher than discriminant correlations. However, with a focus on convergent and discriminant correlations of each item of the TIPI-J, the results doesn't necessarily imply that all items of the TIPI-J have a sufficient-level validity. For example, item 9 of the TIPI-J has higher correlations with other big five domain of the BFS and the Big Five than neuroticism. Further adjustment of Japanese expression is needed.

	existing Big Five scales							
	FFPQ-50		BFS		BFS-S		Big Five	
	Corresponding	Others	Corresponding	Others	Corresponding	Others	Corresponding	Others
TIPI-J								
Extraversion								
Total	<b>.69</b> *	-.36 ~ .40	<b>.85</b> *	-.41 ~ .23	<b>.67</b> *	-.13 ~ .32	<b>.84</b> *	-.26 ~ .22
Item 1	.72 *	-.29 ~ .46	.84 *	-.35 ~ .29	.69 *	-.27 ~ .37	.76 *	-.23 ~ .27
Item 6	-.54 *	-.26 ~ .36	-.69 *	-.19 ~ .39	-.46 *	-.18 ~ .12	-.71 *	-.19 ~ .23
Agreeableness								
Total	<b>.45</b> *	-.20 ~ .30	<b>.65</b> *	-.15 ~ .25	<b>.72</b> *	-.29 ~ .24	<b>.47</b> *	-.29 ~ .24
Item 2	-.30 *	-.21 ~ .20	-.54 *	-.19 ~ .19	-.50 *	-.16 ~ .33	-.34 *	-.14 ~ .31
Item 6	.39 *	-.10 ~ .25	.44 *	-.02 ~ .27	.67 *	-.12 ~ .25	.43 *	-.12 ~ .25
Conscientiousness								
Total	<b>.65</b> *	-.29 ~ .17	<b>.71</b> *	-.25 ~ .23	<b>.64</b> *	.05 ~ .29	<b>.64</b> *	-.22 ~ .41
Item 3	.56 *	-.17 ~ .22	.59 *	-.15 ~ .25	.45 *	.00 ~ .29	.57 *	-.09 ~ .39
Item 8	-.53 *	-.08 ~ .31	-.61 *	-.19 ~ .26	-.64 *	-.21 ~ -.04	-.45 *	-.05 ~ .27
Neuroticism								
Total	<b>.62</b> *	-.29 ~ .05	<b>.64</b> *	-.23 ~ -.11	<b>.60</b> *	-.22 ~ -.11	<b>.67</b> *	-.41 ~ -.16
Item 4	.50 *	-.08 ~ .20	.60 *	-.15 ~ .02	.59 *	-.29 ~ .02	.70 *	-.27 ~ -.04
Item 9	-.43 *	-.13 ~ .43	-.35 *	.01 ~ .38	-.38 *	.05 ~ .22	-.39 *	.05 ~ .40
Openness								
Total	<b>.51</b> *	-.07 ~ .28	<b>.60</b> *	-.15 ~ .24	<b>.60</b> *	-.09 ~ .25	<b>.50</b> *	-.14 ~ .27
Item 5	.50 *	-.08 ~ .30	.46 *	-.14 ~ .28	.50 *	-.03 ~ .19	.34 *	-.01 ~ .24
Item 10	-.33 *	-.05 ~ .11	-.50 *	-.12 ~ .16	-.50 *	-.22 ~ .18	-.49 *	-.22 ~ .20

\*  $p < .001$

### Correlations between self-rated and friend-rated TIPI-J scores

To examine the convergence self- and observer-reports, we explored the correlations between self- and friend-rated TIPI-J scores from thirty-one pairs of friends. The correlations were as follows:  $r = .52, p < .001$  (Extraversion),  $r = .17, n.s.$  (Agreeableness),  $r = .46, p < .001$  (Conscientiousness),  $r = .20, n.s.$  (Neuroticism), and  $r = .27, p < .05$  (Openness). Mean convergent correlation was  $r = .32$ , and it is an almost same level of self-observer correlation of BFI shown in Gosling et al. (2003).

### CONCLUSION

This study supported a certain level of reliability and validity of the TIPI-J. The limitation is that it is less reliable, and correlates less strongly with some variables than scales with many items. However, there are trade-offs between ease of use and the limited reliability and validity. Where only short measurements are needed, the TIPI-J is clearly beneficial in economizing time and space. It is the only brief measurement of the Big-Five dimensions available in Japan at the current time. Further, it provides the potential for cross-cultural study of personality. The TIPI-J is expected to be used in wide variety of research areas.

	TIPI-J	TIPI
E	1.活発で,外向的だと思う	1. Extraverted, enthusiastic.
	6.ひかえめで,おとなしいと思う	6. Reserved, quiet.
A	2.他人に不満をもち,もめごとを起こしやすいと思う	2. Critical, quarrelsome.
	7.人に気をつかう,やさしい人間だと思う	7. Sympathetic, warm.
C	3.しっかりしていて,自分に厳しいと思う	3. Dependable, self-disciplined.
	8.だらしくなく,うっかりしていると思う	8. Disorganized, careless.
N	4.心配性で,うろたえやすいと思う	4. Anxious, easily upset.
	9.冷静で,気分が安定していると思う	9. Calm, emotionally stable.
O	5.新しいことが好きで,変わった考えをもつと思う	5. Open to new experiences, complex.
	10.発想力に欠けた,平凡な人間だと思う	10. Conventional, uncreative.