

# Examination of the Reliability and Validity of the Korean Version of Ten-Item Personality Inventory (TIPI-K): Comparison among America, Germany, China, Japan and Korea<sup>1</sup>

Eiko MATSUDA

松田 英子

Youngsun YUK\*

陸 英善

Kiyoshi ANDO

安藤 清志

Shang E. HA\*\*

河 尚應

## Introduction

After the person-situation debate in the 1970's, it seems apparent that the concept of personality trait revived and the five-factor model (FFM, often called the Big Five) has been the predominant taxonomy for personality traits in personality psychology. Among the researchers in this area, the five factors are commonly labeled *extraversion*, *agreeableness*, *conscientiousness*, *emotional stability (neuroticism)*, and *openness to experience*. Below are brief descriptions of each trait.

### *Extraversion*

Extraversion indicates a personality dimension that is outgoing, highly sociable, energetic, and talkative. Extraverted people seek stimulating situation whereas introverts try to avoid it. Also, they tend to use simple and direct words whereas introverted people tend to choose vague and complex words. Extraversion is one of the most researched personality trait along with emotional stability.

### *Agreeableness*

Agreeableness is a personality trait that indicates kind, sympathetic, cooperative, warm, and considerate tendencies. Individuals high in agreeableness have more social support, as the chance of creating relationship with others is higher than people with low agreeableness. Agreeableness is

---

\* 21st Century Human Interaction Research Center of Toyo University

\*\* Sogang University

1 This study was approved by the research ethics committee of the Graduate School of Sociology, Toyo University (Permission number: P18019).

important in forming first the impression of others.

### *Conscientiousness*

Conscientiousness is a personality trait of being careful and vigilant. Conscientious people tend to be systematic, careful, and tenacious in what they do. On the contrary, people low in conscientiousness tend to be improvisational, careless, and rash in what they do. Previous research has revealed that conscientious people are more successful in school and businesses. However, in an environment where things are unpredictable and quickly changing, there will be no effect on conscientiousness.

### *Emotional stability (Neuroticism)*

Emotional stability concerns a person's ability to remain calm or even keel when faced with pressure or stress. Low emotional stability means high level of neuroticism. Neurotic persons tend to feel negative emotions, have low job satisfaction, and have weaker immune system. Also emotional stability has big effects on other personality traits and can be seen as "amplifier" of other traits.

### *Openness to experience*

Openness to experience involves six facets, or dimensions: active imagination, aesthetic sensitivity, attentiveness to inner feelings, preference for variety, and intellectual curiosity. People with higher levels of openness are imaginative and insightful, and interpret the world more diverse and complex. On the other hand, individuals that have low openness tend to be reluctant to try new things and would prefer to do things as they've already done.

The most standard instrument for measuring the dimensions of five-factor model is the NEO-PI-R (Neuroticism [Low Emotional Stability], Extraversion, Open to experience, Agreeableness, Conscientiousness) consisting of 240 items (Costa & McCrae, 1992). Then 60 items NEO-FFI (Costa & McCrae, 1992) and 44 items Big Five Inventory (John & Srivastava, 1999) were developed as a shortened version of the scale to measure the five factors.

Although it is true that scales which involve many items have better psychometric properties, there are some instances when researchers have to give up using these scales even if they want to. For example, when they plan to study some social and cultural aspects of behavior they have to prepare a lot of questions to measure them, leaving little room to add scales to measure individual differences, such as NEO-PI-R, as moderators. This is why Gosling, Rentfrow, & Swann (2003) developed Ten-Item Personality Inventory (TIPI) to assess more briefly the Big Five personality dimensions, stating that "If the psychometric costs of using short scales are not as steep as might be expected, their relative

efficiency make them a very attractive research tool.” (p.505).

The TIPI was translated to several languages (e.g., Muck, Hell, & Gosling, 2007; Oshio, Abe, & Cutione, 2012; Li, 2015). The Korean Version of TIPI (TIPI-K) was originally introduced by Ha, Kim, & Jo (2013). They examined the relationships between TIPI-K scores and various modes of political participation (e.g., protest participation, rally attendance, financial contributions to political causes, etc.). Although they found some interesting pattern of correlations, the reliability of TIPI-K was not fully examined. Thus the present study aimed at examining the reliability and validity of this scale by analyzing data from Korean high school students, university students and employees. Development and gender differences were also examined and compared with prior cross-sectional studies (Kawamoto, Oshio, Abe, Tsubota, Hirashima, Ito, & Tani, 2015; Soto, John, Gosling, & Potter, 2011).

## Methods

Participants were 739 Koreans: fifty high school students (mean age = 18.32), 463 university students (mean age = 21.80), and 226 company employees (mean age = 36.68). In November of 2017, we administered the TIPI-K (Ha, Kim, & Jo, 2013) to these participants. They were asked to rate each of the ten items on a 7-point scale ranging from 1 (disagree strongly) to 7 (agree strongly). Apart from these samples, we analyzed data of TIPI-K which the fourth author had collected between 2009–2012 to compare with the present data. Furthermore, in order to examine the reliability and validity of TIPI-K, we calculated the internal consistency, correlations between factors as well as descriptive statistics and gender- and age-differences.

## Results

To examine the reliability of TIPI-K, we first calculated the Cronbach's alphas for each scales. They are shown in Table 1, with those obtained in previous studies: original TIPI (Gosling et al., 2003) and translated versions (Muck, Hell, & Gosling, 2007; Oshio, Abe, & Cutrone, 2012; Li, 2013). As can be seen in Table 1, Cronbach's alphas of the present study were reasonably high except agreeableness. This is contrasted with the pattern obtained in other studies, where no such variations were revealed. Furthermore, it is interesting to note that the relative low reliability of agreeableness and conscientiousness among five scales had also be found in previous study (e.g., Ha et al., 2013) for Korean samples.

The inter-factor correlations among five factors of TIPI-K are shown in Table 2. In cases of TIPI-J (Oshio et al., 2012), agreeableness was positively correlated with conscientiousness and emotional stability (low neuroticism). In contrast, as seen in Table 2, no significant correlation was found among these factors with the exception of weak positive correlation with extraversion and weak negative correlation with openness to experiences in the present study. Results from inter-factor correlations also showed that the validity of agreeableness was low as well.

Table 3 shows the means and standard deviations of five domains (the rightmost row), with those of previous studies. It seems that for conscientiousness, and openness to experience, the means of Asian countries (e.g., Chinese, Japanese, and Korean) are lower than those of USA, English-speaking Asian in USA, and Germany.

Table 4 shows the average score of each scales broken by gender for Korean samples. The results of t-tests revealed that Korean males had higher conscientiousness and openness to experience than females whereas females had higher neuroticism and agreeableness than males. Also, in America, Japan, and Korea, females had higher neuroticism than males whereas males had higher conscientiousness and openness to experience than females.

Using the Korean data available, we conducted two-way ANOVA (Gender x Age). It showed the

Table 1. Cronbach alpha

Five factors of TIPI	TIPI (Gosling et al., 2003)	TIPI-G (Muck et al., 2007)	TIPI-J (Oshio et al., 2012)	TIPI-C (Li, 2013)	TIPI-K (Ha, 2009 ~2012)	TIPI-K (present study)
Extraversion	.68	.57	.92	.67	.61	.78
Agreeableness	.40	.42	.85	.60	.12	.10
Conscientiousness	.50	.66	.82	.64	.25	.40
Emotional Stability	.73	.67	.91	.62	.39	.51
Openness to Experience	.45	.54	.86	.64	.48	.67

Table 2. Inter-factor correlations among five factors of TIPI-K

	Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Openness to Experiences
Extraversion	–	-.146**	-.003	.134**	.381**
Agreeableness		–	-.014	-.004	-.137**
Conscientiousness			–	-.344**	-.001
Emotional Stability				–	.004
Openness to Experiences					–

\*\* p < .01

significant main effect of gender for agreeableness and neuroticism. Korean females showed higher scores than Korean males in agreeableness and neuroticism. The main effect of age was significant in agreeableness, conscientiousness, and neuroticism. Agreeableness and conscientiousness of Korean data showed positive trends with age, but neuroticism declined with age. There were no significant interaction effects on any factors. These age and gender differences are almost consistent with the results shown for Japanese (Kawamoto et al., 2015) and English-Speaking samples (Soto et al, 2011).

## Discussion

The TIPI-K was originally introduced by Ha, Kim, & Jo (2013), but its reliability and validity have not been fully examined. Different from other foreign versions of TIPI, TIPI-K seemed to show lower level of reliability (Cronbach's alpha) as for two dimensions: Agreeableness and Conscientiousness. This seems to urges us to revise these scales with more newly nuanced translation of items. For example, the word "critical" contained in second item is translated into Korean as "*bipanttyoida*". When "*bipanttyoida*" was back translated into Japanese, it came out as "critical". As for "quarrelsome", another adjective contained

Table 3. Means and standard deviations of five domains with those of previous studies

Variables	TIPI (Gosling et al, 2003) Total (n=1813)		TIPI (Gosling et al, 2003) Asian (n=333)		TIPI-G (Muck et al, 2007) (n=175)		TIPI-C (Li, 2013) (n=830)		TIPI-J (Oshio et al., 2012) (n=912)		TIPI-K (Ha, 2019-2012) (n=4526)		TIPI-K (present study) (n=739)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
	Extraversion	8.88	2.9	8.24	2.62	9.74	2.42	9.78	2.77	7.83	.10	8.47	2.67	8.39
Agreeableness	10.46	2.22	10.28	2.12	10.40	1.90	7.51	2.42	9.48	.07	9.50	2.07	9.21	2.21
Conscientiousness	10.80	2.64	10.22	2.32	11.70	1.86	8.82	2.53	6.14	.08	9.42	2.31	8.72	2.53
Emotional Stability	9.66	2.84	9.28	2.64	10.20	2.40	7.84	2.72	9.21 <sup>1</sup>	.08	8.36 <sup>1</sup>	2.43	8.48 <sup>1</sup>	2.57
Openness to Experiences	10.76	2.14	10.14	2.16	10.98	1.94	8.40	2.48	8.03	.08	8.46	2.51	8.78	2.71

1 =neuroticism

Table 4. Descriptive statistics of five domains of the TIPI-K by gender

Variables	Total				male				female			
	TIPI-K (Ha et al., 2013) (n=1597)		TIPI-K (present study) (n=739)		TIPI-K (Ha et al., 2013) (n=769)		TIPI-K (present study) (n=314)		TIPI-K (Ha et al., 2013) (n=828)		TIPI-K (present study) (n=425)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Extraversion	8.49	2.69	8.38	3.08	8.38	2.68	8.38	3.13	8.59	2.70	8.40	3.03
Agreeableness	9.52	2.08	9.21	2.21	9.22	2.01	8.85	2.27	9.79	2.12	9.48	2.13
Conscientiousness	9.41	2.34	8.72	2.53	9.41	2.36	9.01	2.45	9.41	2.33	8.51	2.57
Neuroticism	8.23	2.46	8.48	2.57	8.29	2.45	7.82	2.52	8.17	2.46	8.97	2.49
Openness to Experiences	8.59	2.46	8.78	2.71	8.85	2.40	9.19	2.59	8.34	2.49	8.48	2.75

in the second item, means something close to “altercation” where you fight with words without any regards of other’s opinions. In Korean and Japanese translations, the word seemed more closely related to a debate where people would be talking in peace without any negative feelings.

This means that the definition of Gosling’s TIPI had a slightly different meaning compared to the Korean version of TIPI. In Japanese version, where the feasibility was validated, their translated version of quarrelsome were translated as having dissatisfaction and cause dispute against others into Korean which had the correct nuance of the definition of “quarrelsome” compared to the Korean version.

Overall, TIPI-K seems to have reasonable reliability and validity except one factor: agreeableness. In the future research, we need to refine TIPI-K by considering more nuanced translation as well as more rigorous tests of reliability and construct validity.

#### References

- Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Gosling, S. D., Rentfrow, P.J., & Swann Jr., W.B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*, 504–528.
- Ha, S.E. (2009–2012) *Unpublished dataset*.
- Ha, S.E., Kim, S., & Jo, S.E. (2013). Personality traits and political participation: Evidence from South Korea. *Political Psychology, 34*, 511–532.
- John, O.P., & Strivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L.A. Pervin & O.P. John (Eds.) *Handbook of personality: Theory and research* ( 2 nd Edition, pp. 102–139). New York: Guilford Press.
- Kawamoto, T., Oshio, A., Abe, S., Tsubota, Y., Hirashima, T., Ito, H., & Tani, I. (2015). Age and gender differences of Big Five personality traits in a cross-sectional Japanese sample. *Japanese Journal of Developmental Psychology, 26*, 107–122.
- Li, J. (2013). Psychometric properties of Ten-Item Personality Inventory in China. *China Journal of Health Psychology, 21*, 1688–1692.
- Muck, P. M., Hell, B., & Gosling, S. D. (2007). Construct validation of a short five-factor model instrument: A self-peer study on the German adaptation of the Ten-Item Personality Inventory (TIPI-G). *European Journal of Psychological Assessment, 23*, 166–175.
- Oshio, A., Abe,S., & Cuttone, P. (2012). Development, reliability, and validity of the Japanese Version of Ten Item Personality Inventory (TIPI-J). *Japanese Journal of Personality Psychology, 21*, 40–52.
- Soto, C.J., John, O.P., Gosling, S.D., & Potter, J. (2011). Age differences in personality traits from 10 to 65: Big Five domains and facets in a large cross-sectional sample. *Journal of Personality and Social Psychology, 100*, 330–348.

*Keywords: Five-factor model, TIPI-K, Reliability, Validity, International comparison*

Appendix. Comparison of TIPI, TIPI-K and TIPI-J items

Extraversion		
1. Extraverted, enthusiastic.	1. 외향적이다. 적극적이다.	1. 活発で, 外向的だと思う
6. Reserved, quiet.	6. 내성적이다. 조용하다.	6. ひかえめで, おとなしいと思う (R)
Agreeableness		
2. Critical, quarrelsome.	2. 비판적이다. 논쟁을 좋아한다.	2. 他人に不満をもち, もめごとを起こしやすいと思う (R)
7. Sympathetic, warm.	7. 동정심이 많다. 다정다감하다.	7. 人に気をつかう, やさしい人間だと思う
Conscientiousness		
3. Dependable, self-disciplined.	3. 신뢰할수있다. 자기 절제를 잘한다.	3. しっかりしていて, 自分に厳しいと思う
8. Disorganized, careless.	8. 정리정돈을 잘못한다. 텀벙댄다.	8. だらしなく, うっかりしていると思う (R)
Emotional Stability (Neuroticism)		
4. Anxious, easily upset.	4. 근심 걱정이 많다. 쉽게 흥분한다.	4. 心配性で, うろたえやすいと思う (R)
9. Calm, emotionally stable.	9. 차분하다. 감정의 기복이 적다.	9. 冷静で, 気分が安定していると思う
Openness to Experiences		
5. Open to new experiences, complex	5. 새로운 경험들에 개방적이다. 복잡하다.	5. 新しいことが好きで, 変わった考えをもつと思う
10. Conventional, uncreative	10. 변화를 싫어한다. 창의적이지 못하다.	10. 発想力に欠けた, 平凡な人間だと思う (R).

【Abstract】

TIPI-K (10項目人格検査韓国版) の信頼性と妥当性の検討：  
米国、ドイツ、中国、日本版と韓国版の比較

松田 英子  
陸 英善  
安藤 清志  
河 尚應

TIPI (10項目人格検査) は、Gosling ら (2003) が、パーソナリティの主要 5 因子を簡便に測定するために開発された。韓国版の TIPI-K は、Ha ら (2013) によって初めに紹介されたが、信頼性と妥当性の検証まではなされていなかった。そこで本研究は、韓国の高校生、大学生、従業員のデータを使用して、TIPI-K の信頼性と妥当性を検証することを目的とした。さらに他国での尺度の標準化したデータとの比較を行った。具体的には、韓国のデータを、アメリカ、ドイツ、中国、日本の 4 か国のデータとの比較を行った。その結果、5 因子のうち、協調性因子以外の 4 因子の信頼性は十分であった。協調性因子を構成する項目の翻訳を改良する必要性が示唆された。

キーワード：5 因子モデル、TIPI-K、信頼性、妥当性、国際比較