

Development of a Measure of Receptivity to Instructional Feedback and Examination of Its

Links to Personality

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Highlights (for review)

HIGHLIGHTS

- (1) This study provides measurement validity evidence of a receptivity to feedback scale.
- (2) Openness and Conscientiousness are strong predictors of all receptivity factors.
- (3) Emotional instability is predictive of cognitive engagement with feedback.
- (4) Personality factors explain up to 25% of the variability in receptivity.

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Abstract

The purpose of this study was to report on the construction of an instrument to measure receptivity to instructional feedback (RIF) and provide initial validity evidence for its use. We also explored the degree to which students' receptivity of instructional feedback was associated with their the Big Five personality traits of Conscientiousness, Agreeableness, Neuroticism, Openness, and Extraversion. Confirmatory Factor Analysis suggested that the 4-factor initially hypothesized model that comprised experiential attitudes, instrumental attitudes, cognitive engagement with feedback, and behavioural engagement with feedback components had good model fit. Out of the five personality dimensions, Conscientiousness and Openness were the strongest predictors of the receptivity components, especially of students' behavioral engagement with feedback. This study presents initial validity evidence of the utility of the RIF scale.

Key words: the Big Five, feedback, receptivity, engagement with feedback, validity evidence

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There is a general consensus in the field of educational psychology that instructional feedback matters. A substantial body of research has demonstrated that feedback is a key variable that can promote student engagement, help students maintain or enhance motivation, and achieve key instructional goals (Hattie & Timperley, 2007; Lipnevich & Smith, 2018). Studies also consistently conclude that feedback is a gentle beast in that it functions best under specific conditions, and requires a great deal of work for all involved in order to be utilized most effectively. One of the main conditions for the effective use of feedback is whether a student wants to and is capable of incorporating the feedback provided to him or her. After all, if instructors prepare the best kind of feedback and students do not utilize it, the effort will be wasted and no benefit will obtain (Lipnevich, Berg, & Smith, 2016). There is initial evidence to suggest that people may be more or less receptive to feedback across domains (Murano, Martin, Burrus, and Roberts, 2018). In other words, some of us are more eager than others to hear about our performance in general, irrespective of the particular area under consideration. Our goal in this research is to develop and examine a measure of individuals' general receptivity to getting feedback.

The purpose of the study is twofold. First, we report on the construction of an instrument to measure receptivity to instructional feedback and provide initial validity evidence for its use. Specifically, we examine the internal structure of the instrument to provide evidence of construct validity (AERA, APA, & NCME, 2014; ITC, 2016; Wu, Tam, Jen, 2016). Second, we explore the degree to which students' receptivity of instructional feedback is associated with personality traits. Personality characteristics, represented by broad dimensions of the Big Five personality

inventory often subsume newer concepts. We examine the degree to which personality factors relate to, and explain, dimensions of receptivity to feedback. Specifically, this study attempted to answer the following research questions:

1. To what extent is there evidence to support structural validity of the Receptivity to Instructional Feedback (RIF) scale?
2. Are personality factors (as measured by Big Five) related to and explain variability in receptivity to instructional feedback?

Method

2.1 Participants

Participants in this study were $N = 319$ undergraduate students from the United States ($n = 147$) and New Zealand ($n = 172$) enrolled in public universities. Among the United States participants, 81.6% ($n = 120$) were female and 18.4% ($n = 27$) were male. The gender composition of New Zealand participants was very similar with 82.6% ($n = 142$) females and 16.9% ($n = 29$) males. Students' age ranged from 19 to 46 and 18 to 49 with modes 20 and 18 for the U.S. and N.Z. samples, respectively.

2.2 Instrumentation

2.2.1 Receptivity to Instructional Feedback (RIF). The Receptivity to Instructional Feedback (RIF) scale is a self-report instrument designed to measure students' acceptance of instructional feedback. The process of item generation began by reviewing the related literature and studies that discussed potential indicators of receptivity. Measures exist to gauge internal and external feedback propensity and feedback seeking behaviours, but these have been developed in the industrial/organizational context (Anseel, Beatty, Shen, Lievens, & Sackett, 2015; Herold &

Feder, 2003) and describe individuals' tendency to actively request feedback. Our measure is intended to assess factors that describe students' receptivity and responses to instructional feedback. A total of 36 Likert-type items measured on a 5-point scale (1=strongly disagree and 5=strongly agree) was generated under four receptivity components: (1) experiential attitudes towards feedback (i.e., affect; e.g., I look forward to receiving the instructor's comments on my work); (2) instrumental attitudes towards feedback (i.e., value for feedback; e.g., I find the comments I get on my assignment to be very helpful); (3) cognitive engagement with feedback (e.g., I know how to use feedback comments to improve my work); and (4) behavioural engagement (e.g., When I receive feedback, I carefully read every comment).

2.2.2 Big Five Personality Inventory (BFI). The BFI is a 44-item inventory that measures an individual on the Big Five dimensions of personality (Goldberg, 1993). The Big Five Factors are extraversion, agreeableness, conscientiousness, neuroticism, and openness. Responses to each personality indicator ranged from 1 = strongly disagree to 5 = strongly agree. Composite scores were derived by summing up the responses corresponding to each of the five personality factors.

2.3 Analytic Plan

Data were analysed by means of Structural Equation Modelling (SEM) using *Mplus* version 8.3 (Muthén & Muthén, 2019) with weighted least squares mean and the variance adjusted (WLSMV) estimator, which is a robust estimation method specifically designed for categorical data (Sass, Schmitt, & Marsh, 2014). For the first research question, initially, an Exploratory Factor Analysis (EFA) was run on a randomly selected ½ of the sample to determine the factor structure of the RIF scale. Subsequently, Confirmatory Factor Analyses (CFA) were applied to examine the factorial structure of the RIF scale by employing a series of 4-factor models

representing the initially hypothesized structure of the measure. The overall model fit for measurement analyses was evaluated using a number of different indices (Cheung & Rensvold, 2002; Fan & Sivo, 2005, 2007). We used the following indices and their cut-offs for ‘acceptable’ or ‘good’ fit (Brown, 2006; Browne & Cudeck, 1992; Hair, Black, Babin, & Anderson, 2010; Hu & Bentler, 1999; MacCallum, Browne & Sugawara, 1996, Yu, 2002): (1) the Root Mean Square Error of Approximation (RMSEA) with values $< .08$ being indicative of reasonable fit and values $< .05$ indicating a good fit; (2) the Comparative Fit Index (CFI) and Tucker-Lewis index (TLI) with values $> .90$ indicating an acceptable fit and values $> .95$ indicating a good fit; and (3) the standardized root mean square residual (SRMR) with values $< .05$ being indicative of good fit. Indicators that had a factor loading $\lambda \geq 0.5$ were included as items in the factor. Modification indices were also run to detect any possible improvements to the fit of the CFA solutions. Model alterations at the indicator level (i.e., removal, cross-loading, specifying correlations) were conducted to improve model fit across model iterations. For the second research question, bivariate correlation matrices were first conducted, followed by OLS (ordinary least squares) regressions using personality factors as predictors of receptivity to feedback constructs.

Results

3.1 Measurement of Receptivity to Feedback

As suggested in the literature (Noar, 2003; Strauss & Smith, 2009), to examine research question 1, we evaluated the goodness-of-fit of alternative models to understand and provide validity evidence for the factor structure of the RIF scale. The initial EFA models suggested that the 7-factor model was the best fitting model, with the 1-factor model suggesting poor fit: RMSEA = 0.127 (90% CI: 0.124, 0.131), CFI = 0.872, TLI = 0.864, and SRMR = 0.101. Results across the 5-factor, 6-factor, and 7-factor models suggested that the models were overfitting such

that items were cross-loading or negatively loading on more than one factor. All of the CFA models contained 4 latent factors, each representing the initially hypothesized theory-based 4-factor structure of the measure. Across CFA model iterations (e.g., Models 1 – 3), items were excluded based on modification indices. The first CFA model, Model 1, included all original 36 items whilst Model 3 (i.e., the final measurement model) included a reduced set of 24 items. CFA analyses suggested that the 4-factor initially hypothesized model (Model 3), with 24 items had good model fit: RMSEA = 0.069 (90% CI: 0.063, 0.076), CFI = 0.975, TLI = 0.972, and SRMR = 0.041. The internal consistency reliability statistics across the 4 scales ranged from $0.82 < \alpha < 0.92$. All original items of the scale are presented in Table 1 (Supplementary Material). Table 2 (Supplementary Material) provides details the model fit indices of the measurement model iterations. Finally, CFA Model 3 was used to extract factor scores for each of the RIF factors to be examined in the subsequent research question.

3.2 Descriptive Statistics

Descriptive statistics for the total sample and by country samples are provided in Table 3 (Supplementary Material) for the personality and receptivity measures. Descriptive statistics indicate that the highest mean on the personality constructs was agreeableness ($M = 4.026$, $SD = 0.516$) and the lowest was emotional stability (reversed neuroticism) ($M = 2.828$, $SD = 0.730$). Students from the U.S. sample indicated greater receptivity to feedback compared to students from the N.Z. sample, with the largest mean difference observed for cognitive engagement with instructional feedback.

3.3 Personality and Receptivity to Feedback

A correlation matrix was used to initially examine the relations among receptivity to feedback and personality traits (see Table 4). Results indicated that Conscientiousness was most strongly correlated with receptivity factors, with correlations ranging from $r = 0.362$ with the behavioural engagement component and $r = 0.310$ with the instrumental attitudes component (all p -values < 0.01). Statistically significant and positive correlations were also observed between Openness ($0.224 < r < 0.284$) as well as Agreeableness ($0.164 < r < 0.209$) with the receptivity factors. Neuroticism was negatively related to cognitive engagement ($r = -0.175$, $p < 0.01$) and experiential attitudes towards receiving instructional feedback ($r = -0.125$, $p < 0.05$).

Table 4

Correlation Coefficients among Receptivity to Instructional Feedback and Personality Traits

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--------------------------------|---------------------|---------------------|----------------------|---------------------|----------------------|----------------------|----------------------|--------|---|
| Receptivity to Feedback | | | | | | | | | |
| 1. Experiential Attitudes | 1 | | | | | | | | |
| 2. Instrumental Attitudes | 0.898 ^{**} | 1 | | | | | | | |
| 3. Cognitive Engagement | 0.755 ^{**} | 0.815 ^{**} | 1 | | | | | | |
| 4. Behavioral Engagement | 0.817 ^{**} | 0.891 ^{**} | 0.779 ^{**} | 1 | | | | | |
| Personality | | | | | | | | | |
| 5. Extraversion | 0.090 | 0.057 | 0.067 | 0.047 | 1 | | | | |
| 6. Agreeableness | 0.187 ^{**} | 0.164 ^{**} | 0.184 ^{**} | 0.209 ^{**} | 0.166 ^{**} | 1 | | | |
| 7. Conscientiousness | 0.341 ^{**} | 0.310 ^{**} | 0.353 ^{**} | 0.362 ^{**} | 0.144 [*] | 0.378 ^{**} | 1 | | |
| 8. Neuroticism | -0.125 [*] | -0.107 | -0.175 ^{**} | -0.080 | -0.389 ^{**} | -0.341 ^{**} | -0.268 ^{**} | 1 | |
| 9. Openness | 0.224 ^{**} | 0.261 ^{**} | 0.284 ^{**} | 0.274 ^{**} | 0.176 ^{**} | 0.086 | 0.127 [*] | -0.062 | 1 |

Note. * $p < 0.05$; ** $p < 0.01$

Multiple regression models (Table 5), controlling for country (Model 1; 1 = United States; reference category = New Zealand), examined the degree to which personality variables were predictive of receptivity beyond the variance explained by differences in the countries, given the cultural diversity of the sample. The results across the regressions for the four receptivity measures were highly consistent, such that Conscientiousness and Openness were predictive of increases in all four receptivity measures, and Neuroticism was predictive of a decrease in cognitive engagement. The ΔR^2 ranged between .10 and .14 across the four receptivity outcomes. Personality explained the most incremental variability in behavioral engagement, where $\Delta R^2 = 0.14$ and explained the most total variability in cognitive engagement, where Adjusted $R^2 = 0.257$ and $\Delta R^2 = 0.13$, $p < 0.00$. Conscientiousness was a stronger predictor than Openness for predicting all four components of RIF – standardized beta (β) values for Conscientiousness ranged from $0.22 < \beta < 0.27$ whereas for Openness they ranged from $0.13 < \beta < 0.18$. Neuroticism predicted cognitive engagement ($b = -0.15$, $p = 0.03$) but no other receptivity factor, suggesting evidence for discriminant validity among the receptivity factors.

Discussion

In the current study, we aimed to provide initial validity evidence on the internal structure of the RIF self-report instrument designed to measure the degree to which tertiary students were receptive to instructional feedback. We also investigated the association between receptivity and personality to ensure that the construct of receptivity is not subsumed under the Big Five personality dimensions (e.g., Lipnevich & Roberts, 2014).

The CFA results confirmed the existence of four separate factors of receptivity to feedback: experiential attitudes toward feedback, instrumental attitudes toward feedback, cognitive engagement with feedback, and behavioural engagement with feedback. Links between

personality and receptivity were of the expected direction and magnitude, thus providing additional validity evidence and suggesting the construct's differentiation from the Big Five personality factors. Conscientiousness and Openness were the strongest predictors of receptivity, particularly for the behavioural engagement component.

Very often, newly introduced constructs strongly relate to personality factors, and upon careful examination get subsumed under large personality dimensions (MacCann, Lipnevich, Burrus, & Roberts, 2012; see also "jingle-jungle fallacy," Block, 1995). Hence, it was crucial to show that receptivity to instructional feedback could be differentiated from the Big Five factors. Our results revealed that we indeed were not simply reproducing facets of the Big Five personality dimensions. Conscientiousness and Openness were the strongest predictors of the four factors of receptivity, suggesting that students who were achievement-oriented and disciplined (high on C) as well as intellectually curious and open to new information (high on O) would tend to be more receptive to feedback. Agreeableness yielded significant albeit weak links with the RIF factors, indicating that being cooperative and trusting was not the key predictor of high feedback receptivity. This is an interesting finding which shows that one's proclivity to exhibit cooperative behaviours is less predictive of willingness to welcome feedback and engage with it compared to individuals' achievement striving and curiosity. These links have to be further disentangled with studies examining relations among the facets of Big Five, the four factors of the RIF scale, and achievement and well-being outcomes. Finally, we also found that Neuroticism negatively predicted one of the RIF factors – behavioural engagement with feedback – suggesting that individuals' with a higher tendency to be self-conscious and impulsive would be less likely to engage in deep processing of feedback. Such differential links among personality and RIF factors offer evidence of discriminant validity of the scale. In sum,

our initial exploration suggests a promising route for future studies, and establishing links among RIF and well-being and achievement outcomes will be of substantive theoretical and practical significance.

Table 5

Personality Traits as Predictors of Receptivity to Feedback Constructs

| | Experiential Attitudes | | | | Instrumental Attitudes | | | | Cognitive Engagement | | | | Behavioral Engagement | | | |
|--|------------------------|-------------|-------------|----------|------------------------|-------------|-------------|----------|----------------------|-------------|-------------|----------|-----------------------|-------------|-------------|----------|
| | <i>B</i> | <i>S.E.</i> | <i>Beta</i> | <i>p</i> | <i>B</i> | <i>S.E.</i> | <i>Beta</i> | <i>p</i> | <i>B</i> | <i>S.E.</i> | <i>Beta</i> | <i>p</i> | <i>B</i> | <i>S.E.</i> | <i>Beta</i> | <i>p</i> |
| Model 1 | | | | | | | | | | | | | | | | |
| Intercept | -0.22 | 0.07 | | <0.01 | -0.27 | 0.07 | | <0.01 | -0.33 | 0.07 | | <0.01 | -0.28 | 0.07 | | <0.01 |
| Country (1 = U.S.) | 0.46 | 0.10 | 0.25 | <0.01 | 0.58 | 0.10 | 0.30 | <0.01 | 0.70 | 0.10 | 0.38 | <0.01 | 0.61 | 0.10 | 0.31 | <0.01 |
| Model 2 | | | | | | | | | | | | | | | | |
| Intercept | -2.86 | 0.66 | | <0.01 | -2.73 | 0.68 | | <0.01 | -2.38 | 0.63 | | <0.01 | -3.60 | 0.66 | | <0.01 |
| Country (1 = U.S.) | 0.33 | 0.10 | 0.18 | <0.01 | 0.43 | 0.11 | 0.22 | <0.01 | 0.57 | 0.10 | 0.30 | <0.01 | 0.43 | 0.10 | 0.22 | <0.01 |
| Extraversion | 0.04 | 0.07 | 0.03 | 0.55 | 0.01 | 0.08 | 0.00 | 0.93 | -0.01 | 0.07 | 0.00 | 0.94 | 0.00 | 0.07 | 0.00 | 1.00 |
| Agreeableness | 0.10 | 0.10 | 0.06 | 0.32 | 0.09 | 0.11 | 0.05 | 0.42 | 0.06 | 0.10 | 0.03 | 0.54 | 0.17 | 0.10 | 0.09 | 0.11 |
| Conscientiousness | 0.41 | 0.09 | 0.26 | <0.01 | 0.36 | 0.09 | 0.22 | <0.01 | 0.37 | 0.09 | 0.24 | <0.01 | 0.44 | 0.09 | 0.27 | <0.01 |
| Neuroticism | -0.04 | 0.08 | -0.03 | 0.61 | -0.05 | 0.08 | -0.04 | 0.50 | -0.15 | 0.07 | -0.12 | 0.03 | 0.02 | 0.08 | 0.02 | 0.79 |
| Openness | 0.22 | 0.09 | 0.13 | <0.01 | 0.29 | 0.09 | 0.17 | <0.01 | 0.28 | 0.08 | 0.17 | <0.01 | 0.30 | 0.09 | 0.18 | <0.01 |
| Model Fit | | | | | | | | | | | | | | | | |
| Adjusted R ² | | 0.16 | | | | 0.18 | | | | 0.26 | | | | 0.22 | | |
| R ² Change (Model 1 to Model 2) | | 0.12 | | | | 0.10 | | | | 0.13 | | | | 0.14 | | |
| F change (<i>p</i> -value) | | 0.00 | | | | 0.00 | | | | 0.00 | | | | 0.00 | | |

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Supplementary Material

[Click here to download Supplementary Material: R2 PAID Supplementary.docx](#)

Table 1

Factor Loadings of the Final Indicators of the Receptivity to Instructional Feedback (RIF) Scale

| | λ | R^2 |
|---|-----------|-------|
| Experiential Attitudes | | |
| 1. I enjoy learning how well I did on tests or assignments | 0.639 | 0.409 |
| 2. I like it when the instructor tells me what I did wrong on a test or assignment | 0.768 | 0.509 |
| 3. I enjoy reading instructor's comments on my tests/assignments | 0.865 | 0.748 |
| 4. I do not like when my work is evaluated | 0.634 | 0.402 |
| 5. I look forward to receiving the instructor's comments on my work | 0.852 | 0.725 |
| 6. I enjoy talking to the instructor about how to improve my work | 0.637 | 0.406 |
| 7. I hate it when the instructor hands back the work I have done | -- | -- |
| 8. I like learning how I did on an assignment | -- | -- |
| Instrumental Attitudes | | |
| 1. Instructor's comments help me improve my skills and abilities | 0.828 | 0.685 |
| 2. Instructor's feedback is important for my success | 0.823 | 0.677 |
| 3. I use instructor's feedback to improve my future work | 0.925 | 0.855 |
| 4. Instructor's feedback is very effective in helping me enhance my performance | 0.903 | 0.816 |
| 5. Feedback on tests and assignment doesn't help me very much | 0.757 | 0.573 |
| 6. I find the comments I get on my assignment to be very helpful | -- | -- |
| 7. Receiving feedback is the best way to learn | -- | -- |
| 8. I don't find feedback to be helpful | -- | -- |
| Cognitive Engagement | | |
| 1. I understand how to use the feedback that I get | 0.862 | 0.743 |
| 2. The feedback I get makes sense to me | 0.840 | 0.705 |
| 3. The comments the instructor makes on my work are easy to understand | 0.803 | 0.644 |
| 4. I know how to use feedback comments to improve my work | 0.825 | 0.680 |
| 5. When I get feedback on an assignment, I know how to work with it | -- | -- |
| 6. The feedback I get on my work does not make sense to me | -- | -- |
| 7. When I get comments, I do not understand what the instructor is trying to tell me | -- | -- |
| 8. I understand how to use instructor's comments to make my work better | -- | -- |
| Behavioral Engagement | | |
| 1. When I receive feedback, I carefully read every comment | 0.874 | 0.764 |
| 2. I go over instructor's comments several times | 0.739 | 0.547 |
| 3. When I receive feedback, I make sure I understand my mistakes | 0.837 | 0.700 |
| 4. When I receive feedback, I think about how I would do things differently next time | 0.830 | 0.688 |
| 5. When working on a new assignment, I think about the feedback I got previously | 0.742 | 0.550 |
| 6. I work through the feedback I receive | 0.887 | 0.786 |
| 7. I rework my assignments based on the feedback I receive | 0.751 | 0.564 |
| 8. I don't really process the feedback I receive | 0.853 | 0.727 |
| 9. I try to address every comment that instructor makes | 0.704 | 0.495 |
| 10. I only look at feedback quickly | -- | -- |
| 11. I ask my instructor to explain comments I do not understand | -- | -- |
| 12. I spend a lot of time studying instructor's comments | -- | -- |

Note. All factor loadings were statistically significant at $p < 0.001$. Items with omitted factor loadings are items that were dropped from the final confirmatory factor analysis model, Model 3.

Table 2

Model Fit Statistics of Factor Analyses Measurement Model Iterations of the Receptivity to Instructional Feedback (RIF) Scale

| Models | DVs | Model specification | N | k | χ^2 | df | RMSEA | (90 % CI) | CFI | TLI | SRMR |
|-------------|-----|---------------------|-----|-----|----------|-----|-------|----------------|-------|-------|-------|
| EFA | 36 | 1-factor | 159 | 36 | 3671.68 | 594 | 0.127 | (0.124, 0.131) | 0.872 | 0.864 | 0.101 |
| CFA Model 1 | 36 | 4-factor | 319 | 179 | 1765.34 | 588 | 0.079 | (0.075, 0.083) | 0.951 | 0.948 | 0.057 |
| CFA Model 2 | 31 | 4-factor | 319 | 154 | 1151.95 | 428 | 0.073 | (0.068, 0.078) | 0.963 | 0.959 | 0.050 |
| CFA Model 3 | 24 | 4-factor | 319 | 122 | 623.56 | 246 | 0.069 | (0.063, 0.076) | 0.975 | 0.972 | 0.041 |

Note. For the EFA results, the fit indices for the 1-factor model are presented. All of the CFA models contained 4 latent factors, each representing the theory-based 4-factor structure of the measure. Across CFA model iterations (e.g., Models 1 – 3), items were excluded based on modification indices. The first CFA model, Model 1, included all original 36 items of the measure estimated onto their respective hypothesized constructs.

Table 3

Descriptive Statistics of Study Variables for the Study Sample and by Country

| | Extra- version | Agreeable -ness | Conscien- tiousness | Emotional Instability | Openness | Experiential Attitudes | Instrumental Attitudes | Cognitive Engagement | Behavioral Engagement |
|------------------------|-------------------|--------------------|------------------------|--------------------------|----------|---------------------------|---------------------------|-------------------------|--------------------------|
| Total sample (N = 319) | | | | | | | | | |
| Mean | 3.378 | 4.026 | 3.661 | 2.828 | 3.461 | -0.002 | 0.001 | -0.004 | 0.004 |
| Median | 3.375 | 4.000 | 3.667 | 2.750 | 3.400 | -0.129 | -0.199 | -0.108 | -0.139 |
| Std. Deviation | 0.731 | 0.516 | 0.596 | 0.730 | 0.569 | 0.938 | 0.966 | 0.942 | 0.972 |
| Range | 3.500 | 2.500 | 3.000 | 3.750 | 3.200 | 4.406 | 4.481 | 4.279 | 4.343 |
| Minimum | 1.500 | 2.500 | 2.000 | 1.000 | 1.800 | -2.473 | -2.473 | -2.251 | -2.246 |
| Maximum | 5.000 | 5.000 | 5.000 | 4.750 | 5.000 | 1.933 | 2.008 | 2.028 | 2.097 |
| U.S. sample (N = 145) | | | | | | | | | |
| Mean | 3.260 | 4.040 | 3.772 | 2.900 | 3.617 | 0.251 | 0.315 | 0.381 | 0.336 |
| Median | 3.250 | 4.000 | 3.778 | 2.875 | 3.600 | 0.165 | 0.106 | 0.163 | 0.193 |
| Std. Deviation | 0.790 | 0.519 | 0.638 | 0.793 | 0.546 | 0.965 | 0.961 | 0.990 | 0.956 |
| Range | 3.500 | 2.500 | 2.889 | 3.750 | 2.600 | 4.287 | 4.395 | 4.184 | 4.194 |
| Minimum | 1.500 | 2.500 | 2.111 | 1.000 | 2.400 | -2.354 | -2.387 | -2.156 | -2.097 |
| Maximum | 5.000 | 5.000 | 5.000 | 4.750 | 5.000 | 1.933 | 2.008 | 2.028 | 2.097 |
| N.Z. sample (N = 172) | | | | | | | | | |
| Mean | 3.478 | 4.014 | 3.568 | 2.768 | 3.329 | -0.219 | -0.267 | -0.333 | -0.280 |
| Median | 3.500 | 4.000 | 3.556 | 2.750 | 3.250 | -0.226 | -0.387 | -0.397 | -0.256 |
| Std. Deviation | 0.663 | 0.515 | 0.542 | 0.668 | 0.557 | 0.860 | 0.889 | 0.759 | 0.896 |
| Range | 3.375 | 2.444 | 2.778 | 3.125 | 3.200 | 4.244 | 4.271 | 4.154 | 4.182 |
| Minimum | 1.625 | 2.556 | 2.000 | 1.125 | 1.800 | -2.473 | -2.473 | -2.251 | -2.246 |
| Maximum | 5.000 | 5.000 | 4.778 | 4.250 | 5.000 | 1.771 | 1.798 | 1.903 | 1.936 |

Note. Factor scores were extracted for the RIF factors, where M = 0 and SD = 1 are scaled for the total sample.

CRediT author statement

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