

August 14, 2019

Dr. Tony Alessandra
Assessments 24x7
San Diego, CA

Dear Dr. Alessandra –

Thank you for the opportunity to work with Assessments 24x7 in your pursuit of product improvement and increased quality. Your Certificate of Compliance accompanies this letter along with the detailed reports you requested. This certifies third-party evaluation of your Motivators assessment product, and that the assessment meets or exceeds generally accepted standards for data reliability using Cronbach's Alpha as a measure.

ASI complies with the "Standards for Educational and Psychological Testing" procedures manual. The "Standards for Educational and Psychological Testing" were approved as APA policy by the APA Council of Representatives in August 2013, and we operate from the latest 2014 edition of the document. The Testing Standards are a product of the American Educational Research Association, the American Psychological Association and the National Council on Measurement in Education. Published collaboratively by the three organizations since 1966, it represents the gold standard in guidance on testing in the United States and in many other countries.

Additionally, we follow the American National Standards Institute guidelines. ANSI is a non-profit organization that oversees the development of voluntary consensus standards for products, services, processes, systems, and personnel in the United States. Combined, these standards represent the highest quality standards we can apply to the rigorous statistical processes we employ.

Your Motivators assessment results were investigated using the standards, guidelines, and processes recommended by these organizations, and our team is pleased to announce that your assessment meets or exceeds the generally accepted standards for having a aggregated, mean attribute Cronbach's Alpha score greater than 0.70. Please share the accompanying Certificate with pride to your customers and clients. Should they need more information, then you may share the detailed reports as well.

We wish you the best,

Dennis

Dennis W. Koerner, Ph.D.
President & CEO





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EVALUATION CENTER
Assessment Standards Institute
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RENDERED TO

Assessments 24x7
San Diego, CA

PRODUCT EVALUATED: Motivator Assessment
EVALUATION PROPERTY: DATA RELIABILITY

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2. Introduction

This document is provided as a tool for end-users of Motivator Assessments to allow comparisons between the Motivator Assessment and other multi-dimensional, rank order models in the marketplace.

All Motivator instruments, and most similar instruments, are *ipsative* in design. That is, they are self-report inventories that measure *qualities* (traits) as individuals perceive those traits within themselves, and they ask the respondent to choose one trait at the exclusion of the others. This is done via either/or, most/least, or rank-order responses to the instrument. The result is *not* an absolute set of scores that would easily fit in a normative field, but rather a *relative* set of scores that applies to an individual's self-perception. The success of all self-report instruments depends on the insight, candor, honesty, and insight of the respondent. We will provide the essential types of statistical analysis herein, and we caution the reader to be aware of over-analyzing ipsative data. Some companies produce many pages of tables applying normative statistical rules to ipsative data, and we caution the reader to be aware of this. Motivator instruments do not measure *quantities* like levels of cholesterol or blood pressure, but rather *qualities* that an individual report about themselves.

APA Guidelines

Evaluation was conducted in accordance with the Standards for Educational and Psychological Testing; developed jointly by the American Educational Research Assn. (AERA), American Psychological Association (APA), and the National Council on Measurement in Education (NCME).

Evaluation Dates

- Data evaluation began February 21, 2020.
- Data evaluation was completed on February 28, 2020.

3. Test Data Preparation

3.1 SAMPLE SELECTION

Sample data was submitted to ASI directly from the client and were not independently selected for testing. Samples are requested to:

- Be a sufficient number to represent the general population.
- Be randomly selected.

The sample panels were received at the ASI Evaluation Center by email on February 17, 2020.

- **SAMPLE SIZE: N = 5,000 for Influencing Style**
- **SAMPLE SIZE: N = 5,000 for Aesthetic Styles**
- **SAMPLE SIZE: N = 5,000 for Individualistic Styles**
- **SAMPLE SIZE: N = 5,000 for Theoretical Styles**
- **SAMPLE SIZE: N = 5,000 for Regulatory Styles**
- **SAMPLE SIZE: N = 5,000 for Altruistic Styles**
- **SAMPLE SIZE: N = 5,000 for Economic Styles**

3.2 DATA CLEANING

Upon receipt of the samples at ASI, the data was downloaded and cleaned as follows:

1. **Missing Values** – There were no missing values.
2. **Duplicates** – Duplicate entries were removed if present.
3. **Categorization** – Data was categorized and labeled by attribute type for the appropriate comparison.

4. Testing and Evaluation Methods

TEST STANDARDS

Analysis of the data was conducted using standard statistical methods. The statistical method employed was:

- Cronbach's Alpha

Cronbach's alpha

This technique is regarded as one of the most robust measures of reliability and presents the highest 'bar' from which to compare. The readers should note that Cronbach's alpha is the method selected by HRD Press authors and researchers for this instrument, because of its high standards. The reader is encouraged to compare reliability coefficients presented herein to other vendors, and also to ask those vendors which reliability formulas they used to compute their reliability coefficients.

Cronbach's alpha is a measure used to assess the reliability, or internal consistency, of a set of scale or test items. In other words, the reliability of any given measurement refers to the extent to which it is a consistent measure of a concept, and Cronbach's alpha is one way of measuring the strength of that consistency.

Cronbach's alpha is computed by correlating the score for each scale item with the total score for each observation (usually individual survey respondents or test takers), and then comparing that to the variance for all individual item scores:

$$\alpha = \left(\frac{k}{k-1}\right)\left(1 - \frac{\sum_{i=1}^k \sigma_{y_i}^2}{\sigma_x^2}\right)$$

...where: k refers to the number of scale items

$\sigma_{y_i}^2$ refers to the variance associated with item i

σ_x^2 refers to the variance associated with the observed total scores

Cronbach’s alpha is thus a function of the number of items in a test, the average covariance between pairs of items, and the variance of the total score.

The resulting alpha coefficient of reliability ranges from 0 to 1 in providing this overall assessment of a measure’s reliability. If all of the scale items are entirely independent from one another (i.e., are not correlated or share no covariance), then alpha = 0; and, if all of the items have high covariances, then alpha will approach 1 as the number of items in the scale approaches infinity. In other words, the higher the alpha coefficient, the more the items have shared covariance and probably measure the same underlying concept.

Although the standards for what makes a “good” alpha coefficient are entirely arbitrary and depend on your theoretical knowledge of the scale in question, many methodologists recommend a minimum alpha coefficient between 0.70. Alpha coefficients that are less than 0.7 are usually unacceptable.

Researchers generally use the following guidelines to assess the data and help them interpret test-retest reliability coefficients:

- Coefficient below 0.70 are considered suspect, **Questionable**
- Coefficients above 0.70 to 0.80 are considered **Acceptable**
- Coefficients above 0.80 to 0.90 are considered **Very Good**
- Coefficients above 0.90 to 1.00 are considered **Excellent**

5. Testing and Evaluation Results

Cronbach's Alpha Reliability: Table 1

Source	Style	Alpha	N
NP	Theoretical	0.75	5,000
NP	Individualistic	0.66	5,000
NP	Altruistic	0.84	5,000
NP	Political	0.72	5,000
NP	Regulatory	0.70	5,000
NP	Aesthetic	0.79	5,000
NP	Economic	0.81	5,000

Descriptive Statistics: Table 2

Source	Style	Mean	SEM	STD	Median	N
NP	Theoretical	49.9	0.22	15.7	48.0	5,000
NP	Economic	53.8	0.27	19.1	54.0	5,000
NP	Individualistic	53.6	0.21	15.5	53.0	5,000
NP	Altruistic	49.4	0.26	18.7	50.0	5,000
NP	Political	51.2	0.23	16.3	51.0	5,000
NP	Regulatory	44.1	0.22	15.8	45.0	5,000
NP	Aesthetic	44.6	.025	17.6	43.0	5,000

* NP denotes Not Provided

6. Conclusions

The assessment data submitted for evaluation passed the ASI Standards. The assessment had an average Cronbach's Alpha score of 0.75. This assessment mean value is greater than the ASI standard of 0.70. The assessment is therefore awarded ASI Certification.

Issued
February 28, 2020



7. Document Review

ASI TESTING SERVICES

Signed: *Russel J. Watson, Ed.D.*
Chief Psychologist

Signed: *Dennis W. Koerner, Ph.D.*
Chief Technical Officer