



LICENSE NUMBER: A247-MOT-VAL-191111
ORIGINAL ISSUE DATE: November 11, 2019

EVALUATION CENTER
Assessment Standards Institute
5865 Ridgeway Center Parkway, Suite 300
Memphis, TN 38120

RENDERED TO

Assessments 24x7
San Diego, CA

PRODUCT EVALUATED: Motivators Assessment
EVALUATION PROPERTY: CONSTRUCT VALIDITY

1. Table of Contents

1. Table of Contents
2. Introduction
3. Test Data Preparation
4. Testing and Evaluation Method
5. Testing and Evaluation Results
6. Conclusions
7. Document Review

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 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 of the respondent data 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 November 1, 2019.
- Data evaluation was completed on November 11, 2019.

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 accurately represent the general population.
- Be randomly selected.

The sample panels were received at the ASI Evaluation Center by email on November 1, 2019.

SAMPLE SIZE: N = 87,730

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.
3. **Categorization** – Data was categorized and labeled by attribute type for the appropriate comparison.
4. **Data Transformation** – Data was transformed using appropriate methods as necessary for comparison and use in statistical equations.

4. Testing and Evaluation Methods

TEST STANDARDS

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

- Construct Validity

Construct Validity

Construct validity is one of the most central concepts in psychology. It is the degree to which a test measures what it claims, or purports to be measuring. Researchers generally establish the construct validity of a measure by correlating it with a number of other measures and arguing from the pattern of correlations that the measure is associated with these variables in theoretically predictable ways.

Overall, it is the appropriateness of inferences made on the basis of observations or measurements (often test scores), specifically whether a test measures the intended construct. Constructs are abstractions that are deliberately created by researchers in order to conceptualize the latent variable which is correlated with scores on a given measure although it is not directly observable). Construct validity examines the question: Does the measure behave like the theory says a measure of that construct should behave?

Correlations

The purpose of a correlation is to display the level or correspondence or *co-relationship* between two variables. An item or trait correlated against itself yields a perfect correlation of 1.0, that's as high as the scale goes. A completely opposite correlation yields a coefficient of -1.0, and that's a perfect inverse or negative correlation. Scores that have no co-relationship at all, show a correlation coefficient at or near zero.

That is, all correlations follow a spectrum of scores beginning at +1.0, passing through zero, and ending at -1.0. The closer a correlation is to zero, the lower the correlation. The more a correlation coefficient moves away from zero, in either direction, the stronger the correlation becomes. The more a correlation coefficient approaches +1.0 or -1.0, the stronger the correlation becomes.

The reader should note that there is no agreed-upon table in the world of statistics that 'grades' a correlation as weak or strong in absolute, definitive terms. As a result, specific commentary by a field of researchers may vary with regard to what they consider to be 'strong' or 'weak' correlations. The team of scientists at ASI have selected to establish the criteria as posted below.

- 0.00 – 0.19 “Very Weak”
- 0.20 - 0.39 “Weak”
- 0.40 - 0.59 “Moderate”
- 0.60 - 0.79 “Strong”
- 0.80 - 1.00 “Very Strong”

Other statisticians may present divergent opinions based on their own scientific observations and training.

5. Testing and Evaluation Results

Pearson’s Correlation Coefficients, Motivator Interactions: Table 1

	<i>TheoreticalScore</i>	<i>EconomicScore</i>	<i>IndividualisticScore</i>	<i>AltruisticScore</i>	<i>PoliticalScore</i>	<i>RegulatoryScore</i>	<i>AestheticScore</i>
TheoreticalScore	1.000						
EconomicScore	-0.264	1.000					
IndividualisticScore	-0.150	-0.230	1.000				
AltruisticScore	-0.161	-0.512	-0.015	1.000			
PoliticalScore	-0.321	0.421	-0.194	-0.436	1.000		
RegulatoryScore	-0.152	-0.043	-0.474	-0.017	0.063	1.000	
AestheticScore	0.139	-0.452	0.117	0.066	-0.537	-0.331	1.000

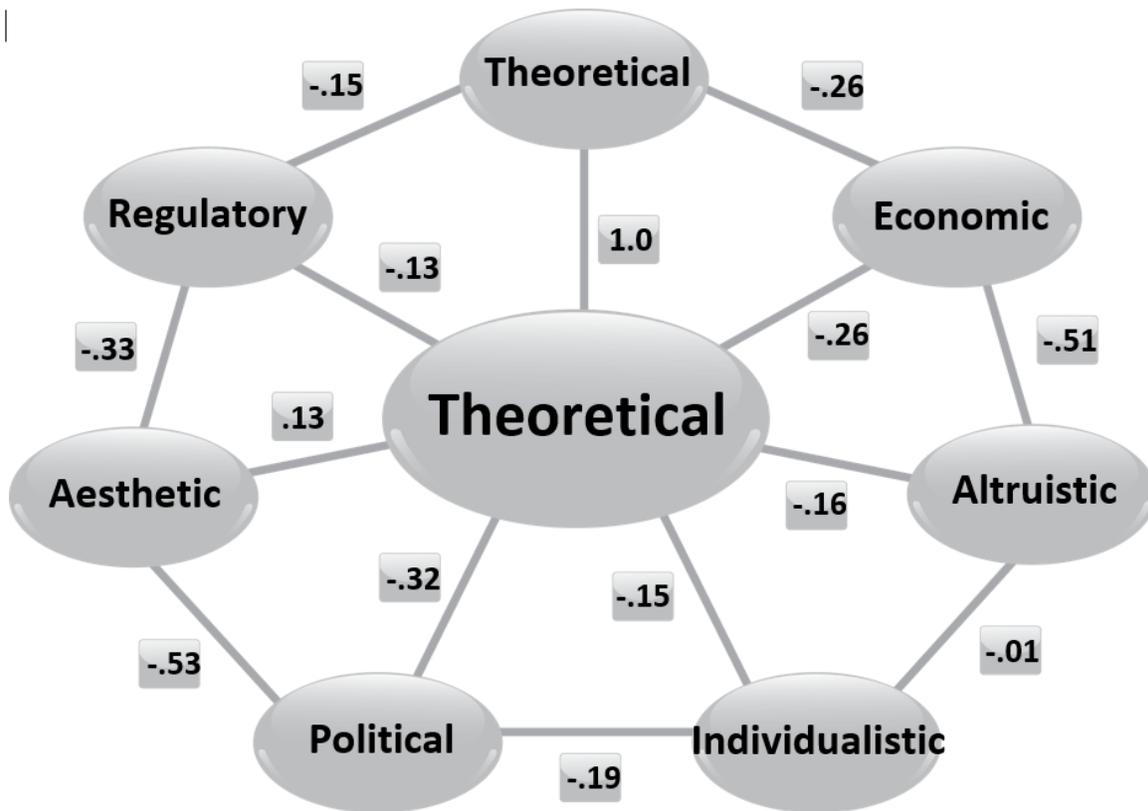
Description

In any rank-order response assessment, it is more common to observe negative correlations than positive ones. The reason for this is that one item is always selected ‘at the expense’ of another item in ranking; this results in multiple cases of negative correlations. The current assessment is no different, and the reader will observe numerous negative correlations. This is to be expected. The correlations among the seven scales shown in the composite Table 1 above support the general model for indicating construct validity.

Cross-lagged Panel Analysis

The cross-lagged panels on the following pages show the correlations of the variables measured in an at-a-glance method of comparison for the reader. This is the same data as in the correlation tables but shows a model by which the reader may observe the relationships in a graphical representation. The cross-lagged panel is used in a variety of designs including experimental procedures and cause and effect investigations. It is used here to provide a non-tabular view of the correlations within all of the Motivators variables used in the assessment. Weak or Moderate correlations are indicative of construct validity.

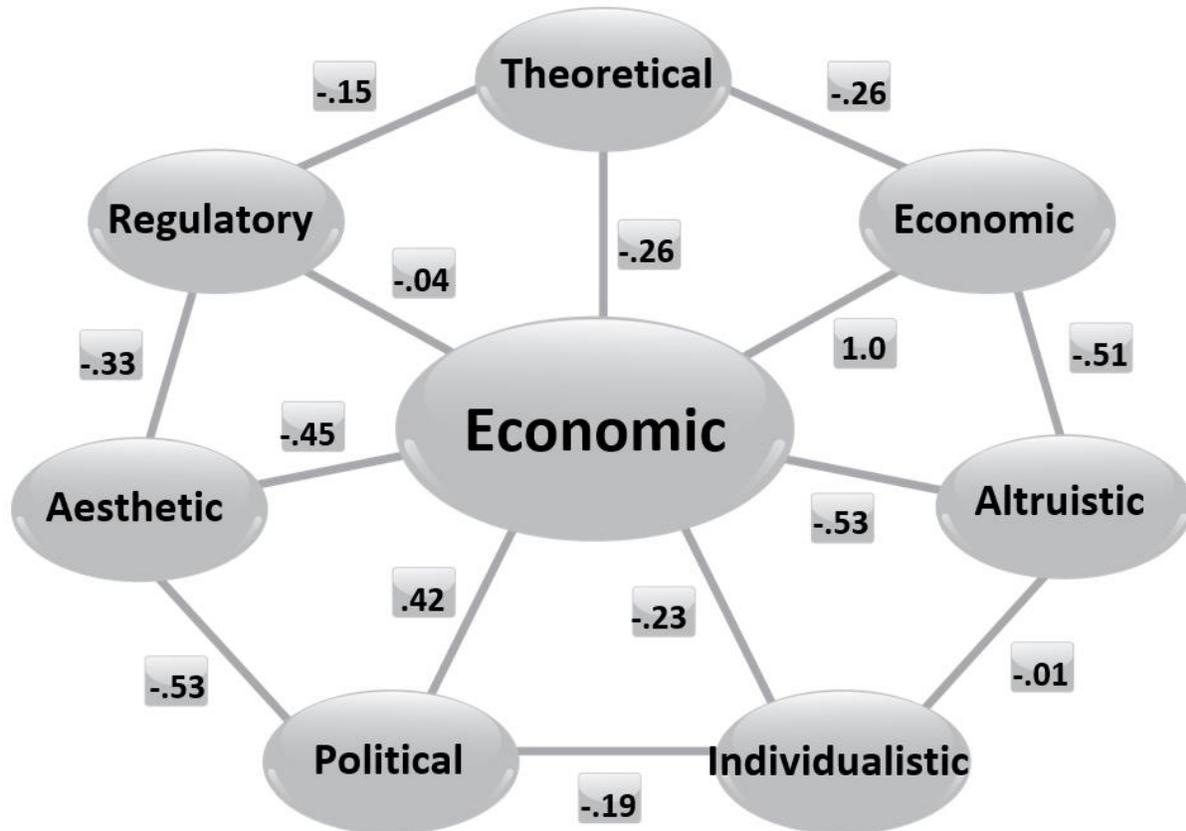
Cross Lagged Correlation: Theoretical: Graph 1



Cross-lagged correlation of **Theoretical** construct results.

The Cross-Lagged correlation chart allows for at-a-glance review of the relationship between each of the Motivators components. To read the chart above, notice the correlation number between each of the Motivators variables as you observe the numbers around the outside of the chart. Notice that most of the correlations are negative. This is typical based on the response pattern of this or any rank-order instrument. One is always choosing an answer 'at the expense' of an alternative. The focus Motivator is in the center of the chart, and it always has a perfect 1.0 correlation with itself. The radial lines going out from the focus Motivator represent its relationship with each of the other motivator's themes.

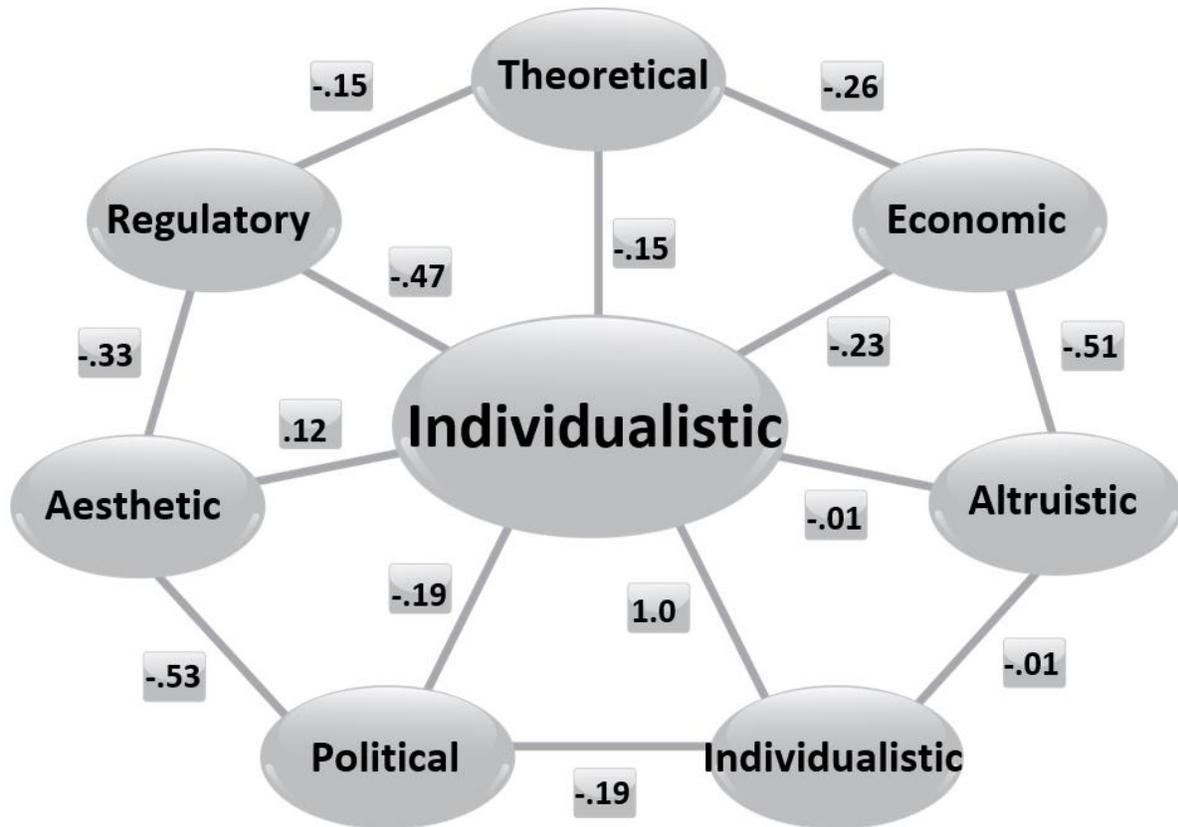
Cross Lagged Correlation: Economic: Graph 2



Cross-lagged correlation of Economic construct results.

The Cross-Lagged correlation chart allows for at-a-glance review of the relationship between each of the Motivators components. To read the chart above, notice the correlation number between each of the Motivators variables as you observe the numbers around the outside of the chart. Notice that most of the correlations are negative. This is typical based on the response pattern of this or any rank-order instrument. One is always choosing an answer 'at the expense' of an alternative. The focus Motivator is in the center of the chart, and it always has a perfect 1.0 correlation with itself. The radial lines going out from the focus Motivator represent its relationship with each of the other motivator's themes.

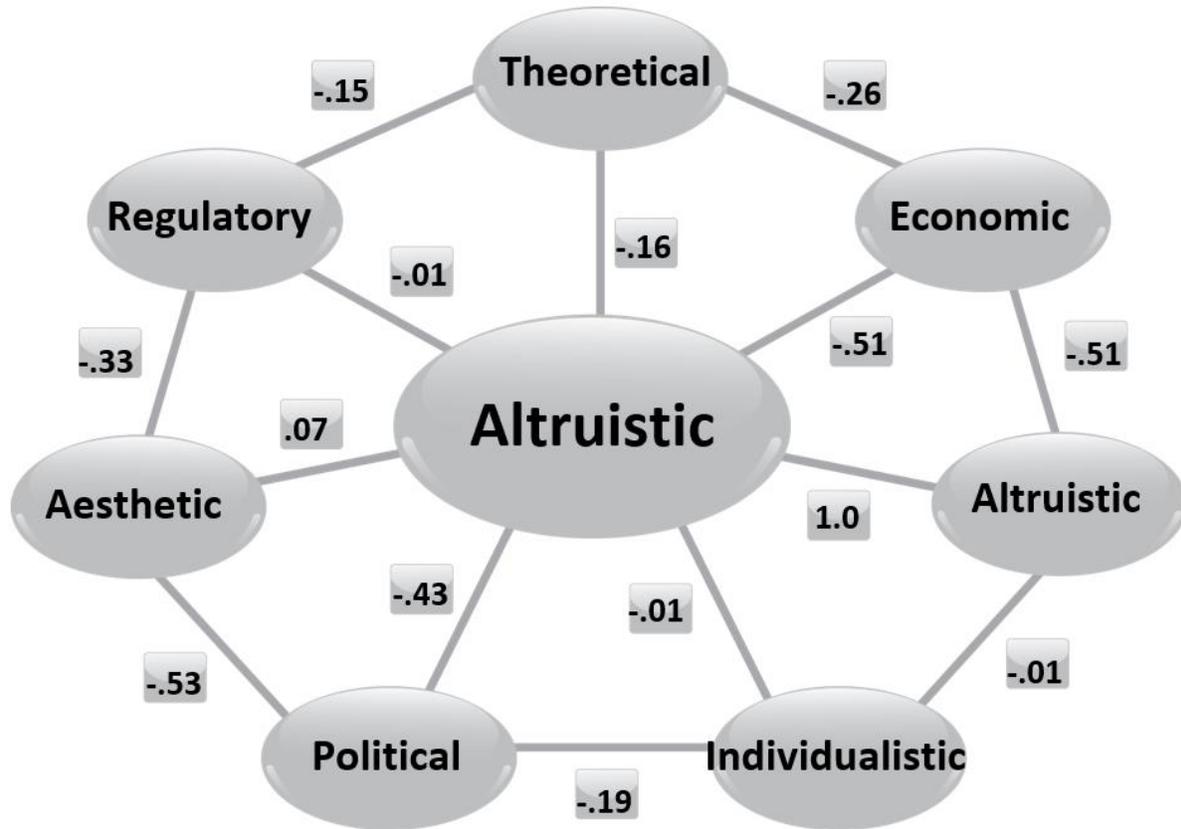
Cross Lagged Correlation: Individualistic: Graph 3



Cross-lagged correlation of Individualistic construct results.

The Cross-Lagged correlation chart allows for at-a-glance review of the relationship between each of the Motivators components. To read the chart above, notice the correlation number between each of the Motivators variables as you observe the numbers around the outside of the chart. Notice that most of the correlations are negative. This is typical based on the response pattern of this or any rank-order instrument. One is always choosing an answer 'at the expense' of an alternative. The focus Motivator is in the center of the chart, and it always has a perfect 1.0 correlation with itself. The radial lines going out from the focus Motivator represent its relationship with each of the other motivator's themes.

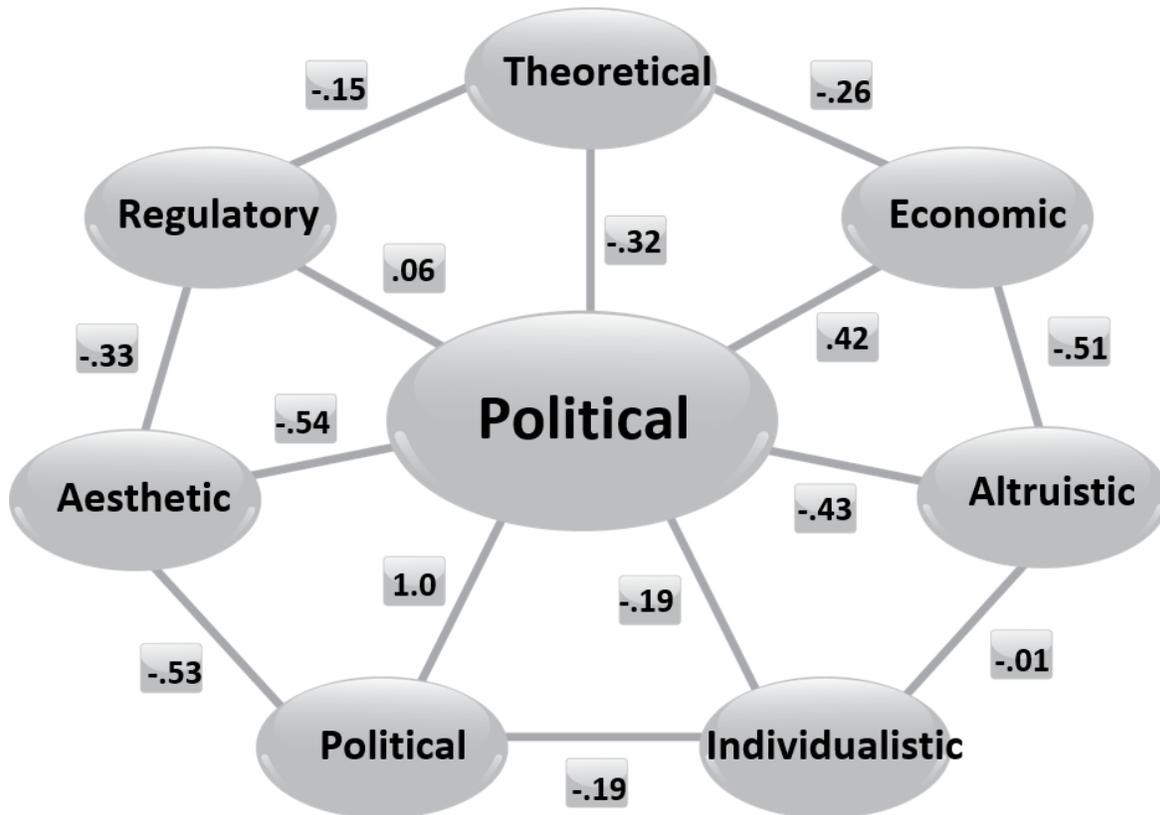
Cross Lagged Correlation: Altruistic: Graph 4



Cross-lagged correlation of **Altruistic** construct results.

The Cross-Lagged correlation chart allows for at-a-glance review of the relationship between each of the Motivators components. To read the chart above, notice the correlation number between each of the Motivators variables as you observe the numbers around the outside of the chart. Notice that most of the correlations are negative. This is typical based on the response pattern of this or any rank-order instrument. One is always choosing an answer 'at the expense' of an alternative. The focus Motivator is in the center of the chart, and it always has a perfect 1.0 correlation with itself. The radial lines going out from the focus Motivator represent its relationship with each of the other motivator's themes.

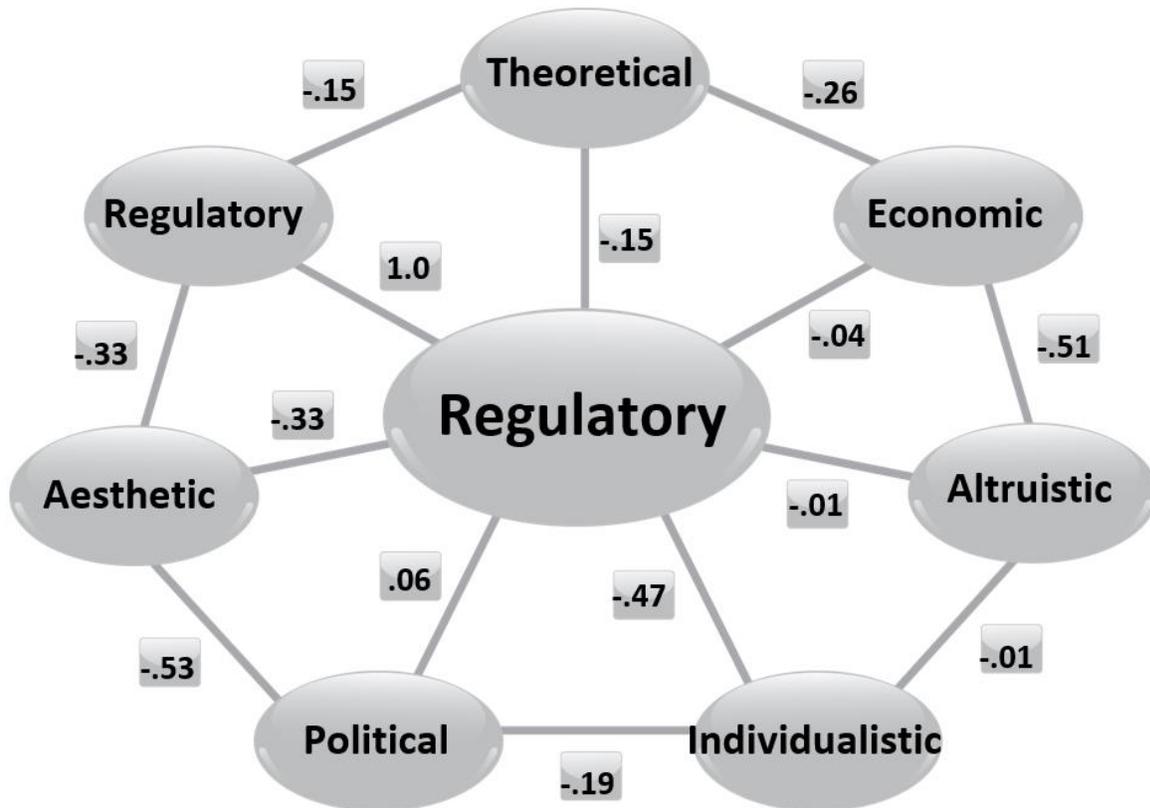
Cross Lagged Correlation: Political: Graph 5



Cross-lagged correlation of **Political** construct results.

The Cross-Lagged correlation chart allows for at-a-glance review of the relationship between each of the Motivators components. To read the chart above, notice the correlation number between each of the Motivators variables as you observe the numbers around the outside of the chart. Notice that most of the correlations are negative. This is typical based on the response pattern of this or any rank-order instrument. One is always choosing an answer ‘at the expense’ of an alternative. The focus Motivator is in the center of the chart, and it always has a perfect 1.0 correlation with itself. The radial lines going out from the focus Motivator represent its relationship with each of the other motivator’s themes.

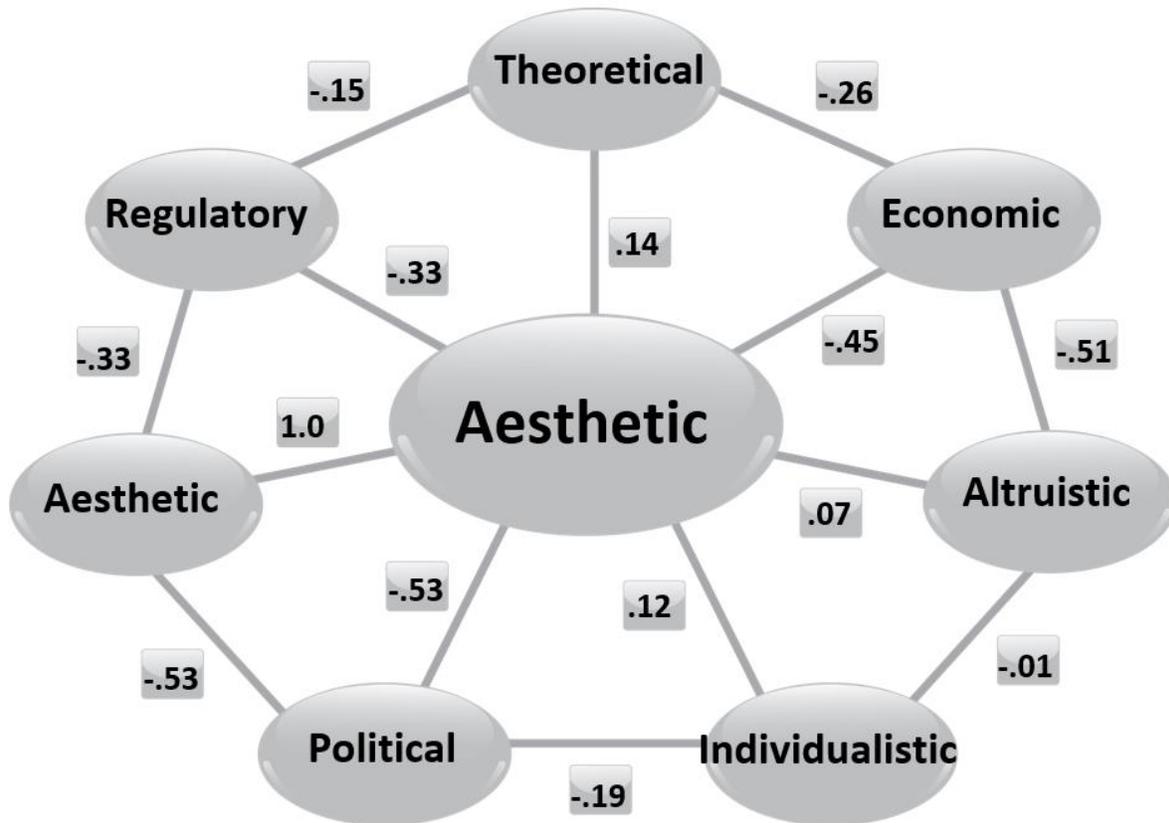
Cross Lagged Correlation: Regulatory: Graph 6



Cross-lagged correlation of Regulatory construct results.

The Cross-Lagged correlation chart allows for at-a-glance review of the relationship between each of the Motivators components. To read the chart above, notice the correlation number between each of the Motivators variables as you observe the numbers around the outside of the chart. Notice that most of the correlations are negative. This is typical based on the response pattern of this or any rank-order instrument. One is always choosing an answer 'at the expense' of an alternative. The focus Motivator is in the center of the chart, and it always has a perfect 1.0 correlation with itself. The radial lines going out from the focus Motivator represent its relationship with each of the other motivator's themes.

Cross Lagged Correlation: Aesthetic: Graph 7



Cross-lagged correlation of **Aesthetic** construct results.

The Cross-Lagged correlation chart allows for at-a-glance review of the relationship between each of the Motivators components. To read the chart above, notice the correlation number between each of the Motivators variables as you observe the numbers around the outside of the chart. Notice that most of the correlations are negative. This is typical based on the response pattern of this or any rank-order instrument. One is always choosing an answer 'at the expense' of an alternative. The focus Motivator is in the center of the chart, and it always has a perfect 1.0 correlation with itself. The radial lines going out from the focus Motivator represent its relationship with each of the other motivator's themes.

6. Conclusions

The Motivators model for construct validity proposes that the assessment measures should have weak or moderate correlations to adjacent scales. In this evaluation the primary measure is the correlation of one motivator scale to each of the other scale results. The correlations among the seven scales shown in the composite table above and subsequent graphs support the general model for Motivators construct validity.

The data submitted for evaluation passed all acceptable ASI standards and is therefore awarded ASI Certification.

Certified
November 11, 2019



7. Document Review

ASI TESTING SERVICES

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

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