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**RENDERED TO**  
**Personality Insights, Inc.**  
**Griffin, GA**

**PRODUCT EVALUATED: DISC Assessment**  
**EVALUATION PROPERTY: TEST RETEST AND MEAN VARIANCE**

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## 2. Introduction

The Assessment Standards Institute has conducted data analysis to evaluate the stability of provided **DISC** data over time using a data reliability coefficient.

Stability refers to the tools ability to produce the same measurements over a defined unit of time. The test or assessment stability is generally measured in two ways:

1. **Test–Retest:** In this method respondents complete the questionnaire twice, with a suitable time period between the two measurements. Value variances are then compared to determine stability. Thus, if a measurement tool consistently produces the same result, the relationship between those data points would be high. To answer the question of relationship, researchers traditionally use the correlation coefficient ( $r$ ) which measures the strength of the data relationship between time taken one (T1) and time take two (T2). An assessment tool providing the same data output at every time point would therefore produce a perfect linear correlation of  $r = 1$ .
2. **Mean Variance:** While it is useful to know the degree of relationship between the data points, the true question we are aiming to ascertain with test re-test reliability is the magnitude of agreement between the time points data rather than the relationship. Through plotting the data points and calculating the difference between each data point and the mean (mean difference) alongside the standard deviation, we can assess how agreeable the measures are. In this method general population mean results from an initial time period are compared to the general population mean results from a later time period. Results then measure differences and their significance.

### Evaluation Dates

- The data evaluation began December 27, 2021
- Analysis was completed on January 3, 2022.

## 2. 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.

### 3.2 DATA CLEANING

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

1. **Missing Values** – Were left missing.
2. **Duplicates** – Duplicate entries were removed.
3. **Categorization** – Data was categorized and labeled by protected class.

## 4. Testing and Evaluation Methods

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

### (A) Test – Retest Method:

The stability of assessment, test-retest reliability is measured by asking a group of respondents to take an assessment instrument on one occasion and then asking those same respondents to take the same test again at a later time. If the instrument is stable, the results of the instrument should not change in a meaningful manner.

This stability can be quantified in the form of a reliability coefficient, which is a statistic that is generated by looking at the mathematical relationship between a group's initial scores on an instrument and their subsequent scores. Reliability coefficients range between -1 and +1. The closer that a correlation coefficient is to +1, the more stable the instrument is considered to be reliable.

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

- Coefficient below 0.70 are considered unacceptable
- Coefficients above 0.70 are considered acceptable, and
- Coefficients above 0.80 are considered very good

### (B) Difference of Means Test:

Another measure of difference in the data is the two tailed t-test. In this analysis, data is categorized by class type. The data is then analyzed to determine:

1. The data mean
2. Data standard deviation
3. P-values

Assuming a normal distribution of the data, the data is then compared using a two tail, t-test. The null hypothesis assumes no significant difference exists

between the means. If the results of the test produce a t-value that results in a probability of 0.05 or greater, the means are considered to be significantly different.

## 5. Test Retest: Evaluation Results

| DISC Style | Attribute Mean |        | Difference | Reliability Coefficient |
|------------|----------------|--------|------------|-------------------------|
|            | Time 1         | Time 2 |            |                         |
| <b>D</b>   | 47.4           | 47.5   | 0.1        | 0.84                    |
| <b>I</b>   | 52.2           | 52.3   | 0.1        | 0.84                    |
| <b>S</b>   | 55.0           | 55.2   | 0.2        | 0.82                    |
| <b>C</b>   | 53.1           | 53.3   | 0.2        | 0.83                    |

| DISC Style | Attribute Mean |        | p Value | Result                    |
|------------|----------------|--------|---------|---------------------------|
|            | Time 1         | Time 2 |         |                           |
| <b>D</b>   | 47.4           | 47.5   | 0.98    | No Significant Difference |
| <b>I</b>   | 52.2           | 52.3   | 0.98    | No Significant Difference |
| <b>S</b>   | 55.0           | 55.2   | 0.95    | No Significant Difference |
| <b>C</b>   | 53.1           | 53.3   | 0.96    | No Significant Difference |

## 6. Conclusions

The data submitted for evaluation passed all ASI standards for the Test-Retest analysis and therefore is awarded ASI Certification.

**Certified**  
**January 3, 2022**



## 7.Document Review

### ASI TESTING SERVICES

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