



## TriMetrix™ System

### Validity, Reliability and Adverse Impact Analysis

Target Training International, Ltd.

The assessments used and recommended by The Nielson Group and developed by Target Training International, Ltd. (TTI) have been carefully and thoroughly reviewed to ensure reliability and validity, and to not generate adverse impact.

The TriMetrix™ System (TriMetrix) combines three independent areas of focus using specific bodies of research: Marston's DISC behavioral model, Spranger's classification of personal values and Dr. Robert S. Hartman's studies of human talent. TTI has commissioned independent studies periodically to ensure reliability, validity and compliance with Equal Employment Opportunity Commission<sup>1</sup> (EEOC.) for all TriMetrix assessments.

The TriMetrix profile is a 21st century assessment combining the original work of Dr. Robert S. Hartman (Attribute Index™) with Marston's behavioral model (Style Insights™) and Spranger's studies on values (Motivation Insights™).

- Construct
- Concurrent
- Criterion
- EEOC Compliant
- Face Validity
- Predictive Validity



#### Attribute Index™

Over 28 individual validity studies have been performed on this body of work over the last 20 years by more than 19 separate examiners. The results scientifically proved it to be an extremely accurate means of assessing an individual's level of talent in over 80 key areas, or competencies, without bias from age, race, sex or ethnicity.

#### Style Insights™ and Motivation Insights™

The Style Insights instrument and Motivation Insights instrument were recently revised in 2003 as part of TTI's commitment to continuous quality improvement. The attached provides a summary statement regarding their validity and reliability. A large body of research supports the reliability and validity of the TTI Style Insights and Motivation Insights dimensions. This research has provided evidence of high test-retest reliability, strong construct validity providing the relationship of the Style Insights to other tests measuring similar constructs, robust content validity, significant criterion or predictive validity and powerful construct validity showing the extent to which the DISC dimensions measure a specific trait.

<sup>1</sup> The Equal Employment Opportunity Commission (E.E.O.C.) has established that screening instruments, psychological testing, personality tests, and all other evaluation procedures that are used in industry are to fulfill the Uniform Guidelines on Employment Selection Procedures (1978). Employer policies and practices which have an adverse impact on the employment opportunities of any age, race, sex, or ethnic group are illegal. Employer decisions include, but are not limited to hiring, promotion, demotion, membership, referral, licensing, and certification. Included in the law is the statement: "*notwithstanding any other provision of this (Act), it shall not be unlawful employment practice for an employer to give and act upon the results of any professionally developed ability test provided that such test, its administration or action upon the results is not designed, intended or used to discriminate because of race, color, religion, sex or national origin.*" (Civil Rights Act of 1964, Title VII, Section 703b).

# NEW TTI INSTRUMENT RELIABILITY STUDIES

TTI continues the process of quality improvement in its assessments with this announcement of recently completed statistical studies. The following summary conclusions are excerpted from research completed on July 28, 2003, by Peter T. Klassen, Ph.D.

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## Style Insights™

(TTI's new DISC instrument referred to as Style Analysis 2 below)

### *Summary Conclusion*

Based on a series of examinations of scale and item reliabilities across multiple populations of respondents, revisions were developed and tested for TTI's Style Analysis™ that culminated in development of a revised instrument. The results of assessment of this revised edition indicate improved reliability for the two dimensions (adaptive, nature) of four parallel scales (D,I,S,C) ranging from .72 to .84. Each of the ninety-six items used to construct the scales contributes at a significant level to one or both the scales dimensions. Correlations between adaptive and natural scales indicate that these two dimensions of parallel scales are highly related, as one would expect, but also that the scales are sufficiently independent measures to justify separate interpretations and comparisons. Scores on the scales are distributed across all scale points, which supports making comparison between individuals and the self-reported behaviors in a population. Revision of the instrument included utilization of new population distributions that anchored comparisons in a population representative of the 21<sup>st</sup> century. Overall, the Style Analysis 2 is a strong, reliable instrument applicable across a variety of populations.

### *Revised Scale Reliability*

Scale reliabilities were calculated using Cronbach's Alpha. Cronbach's Alpha is considered the most appropriate statistical test for reliability, given the dichotomous responses used to construct the scales. For dichotomous data, this is equivalent to the Kuder-Richardson formula 20 (KR20) coefficient. These evaluations are a more rigorous approach than a traditional split-half statistic. Cronbach's Alpha ranges in value from 0 to 1. In general an Alpha equal to or greater than .6 is considered a minimum acceptable level, although some authorities argue for a stronger standard of at least .7. **These findings document the revised SA2 (Style Insights™) as an instrument with solid scale construction and reliability.**

| <b>New Style Insights™</b> | <b>Adaptive</b> | <b>Natural</b> |
|----------------------------|-----------------|----------------|
| Dominance-Challenge        | <b>.83</b>      | <b>.84</b>     |
| Influence-Contact          | <b>.83</b>      | <b>.81</b>     |
| Steadiness-Consistency     | <b>.78</b>      | <b>.72</b>     |
| Compliance-Constraints     | <b>.73</b>      | <b>.80</b>     |

## Motivation Insights™

(TTI's new Values instrument referred to as Personal Interests, Attitudes and Values 2 below)

### *Summary Conclusion*

Based on a series of examinations of scale and item reliabilities, revisions were developed and tested for TTI's Personal Interests, Attitudes and Values™ that culminated in development of a revised instrument. The results of assessment of this revised edition indicate high or improved reliability for the six scales with Cronbach's ranging .7 to .82. Each of the seventy-six items used to construct the scales contributes at a significant level to its assigned scale. Correlations among the six scales indicate that they are substantially independent in measurements. Scores on the scales are distributed across the scales leading to meaningful comparisons and interpretation. Overall, the Personal Interests, Attitudes and Values 2 is a strong, reliable instrument applicable across a variety of populations.

### *Revised Scale Reliability*

Scale reliabilities were calculated using Cronbach's Alpha. Cronbach's Alpha is considered the most appropriate statistical test for reliability, given the ranking of responses used to construct the scales. This statistic models internal consistency based on the average inter-item correlation. It is a more rigorous test than a traditional split-half statistic. Cronbach's Alpha ranges in value from 0 to 1. In general an Alpha equal to or greater than .6 is considered a minimum acceptable level, although some authorities argue for a stronger standard of at least .7. **These findings document the revised PIAV 2 (Motivation Insights™) as an instrument with solid scale construction and reliability.**

| <b>New Motivation Insights™ (PIAV 2)</b> |            |
|--|------------|
| Theoretical                              | <b>.77</b> |
| Utilitarian                              | <b>.80</b> |
| Aesthetic                                | <b>.82</b> |
| Social                                   | <b>.82</b> |
| Individualistic                          | <b>.70</b> |
| Traditional                              | <b>.81</b> |

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TTI is incorporating these new instruments into its product line to bring TTI Distributors and their Clients the most highly reliable assessments of their kind on the market today.