



## CIRCUMPLEX LEADERSHIP SCAN 360°

# EVIDENCE-BASED CRITERIA

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How the CLS360 meets the criteria for evidence based.

### THREE EVIDENCE-BASED CRITERIA

<b>CRITERION 1: THEORY</b>	Is the diagnostic based on sound and tested theory, that is, has the theory been tested multiple times and found to be convergent with, or at the very minimum not contradictory to, other scientific domains, e.g., evolutionary biology, evolutionary psychology, or physics?
<b>CRITERION 2: STATISTICS</b>	Does the test construction meet the highest psychometric (psychological measurement) standards?
<b>CRITERION 3: PUBLISHED</b>	Has the research on which the diagnostic is based been peer reviewed and published in a respected scientific journal or high impact A1 journal, i.e., a peer-reviewed international magazine?

### CRITERION 1. THEORY

A psychological theory can never be 'true' if it contradicts the laws of physics and findings in evolutionary biology (our brain is an organ of 'flesh' and 'blood') and chemistry (our brain cannot function without chemical processes).

The underlying theory of the CLS360 is the interpersonal circumplex. Since its first publication in 1957, the interpersonal circumplex theory has been researched and confirmed for more than 60 years (for an overview, see <http://sitarsociety.weebly.com/publications-and-links.html>). It is now considered a universal model that can be used to represent human interpersonal behavior. The circumplex theory converges with findings in evolutionary biology; that is, all social species are driven by two metamotives: compete (agency) and collaborate (communion). Agency is the vertical axis in the circumplex, communion is the horizontal axis.

The hypothesis that leadership could be represented in the interpersonal circumplex was confirmed in six European studies and one Australian study.

### CRITERION 2. STATISTICS

Two criteria are used to judge the quality of a psychometric test—reliability and validity.

#### Reliability

Psychometric reliability is a measure of a test's consistency, measurement errors, and replicability. In other words, does the test measure correctly (only a small error margin)? Two common methods for establishing reliability are internal reliability and test-retest reliability.

#### (i) Internal (consistency) reliability of scales

Do the items or questions that make up the scales of the model show high levels of internal consistency? It is undesirable to have items that are not correlated in the same scale; if this is the case, they may not even belong in a particular scale. All of the items should measure the same general construct (e.g., inspirational leadership). An acceptable scientific standard is .70 (Cronbach's alpha coefficient).

The CLS360 scales exceed this standard as they range from .77 (Directive) to .91 (Coaching), which is considered good to excellent.

#### (ii) Test-retest reliability

When leaders are asked to repeat the survey, are the survey results from the first and second administration similar? It is undesirable for the results to be significantly different from the first to the second administration of the diagnostic within four to six weeks. Psychometric test-retest reliability is expressed as a correlation coefficient. An acceptable scientific standard is .70.

The CLS360 scales exceed this standard as they range from .75 (Distrustful) to .87 (Inspirational), indicating high test-retest reliability, which is considered good to excellent.

#### Validity

Does the test actually measure what it claims to measure? Two typical ways to test this are convergent validity and predictive validity.

#### (i) Convergent validity

Do the diagnostic's scales 'converge' or align with other existing evidence-based questionnaires measuring the same concepts? It is typically expressed as correlation coefficients.

The CLS360 scales show strong convergence with a range of other scientifically accepted scales, and the CLS360 scales have demonstrated higher reliability.

#### (ii) Predictive validity

Does the diagnostic 'predict' hypothesised outcomes?

The CLS360 strongly predicts leadership outcomes such as performance and effort. There is a vast body of research linking styles to outcomes such as effectiveness, organisational commitment, job satisfaction, turnover, etc.

### CRITERION 3. PUBLISHED

To be published in A1 journals the research needs to meet the 'gold standard,' including hypothesis testing and replication, and must show a contribution to the advancement of the science. Ideally, the research should be included in broader meta-analyses of similar research over time to confirm its efficacy across a large number of scientific trials.

The CLS360 research has met the 'gold standard' by being the outcome of a PhD study (Marleen Redeker, Free Amsterdam University) and more importantly has been published in the peer-reviewed A1 journal, the *European Journal of Work and Organizational Psychology*.

This paper has been made open access—it can be consulted via this link:

<http://dx.doi.org/10.1080/1359432X.2012.738671>