

Oct 31, 2025

A Solution to the Reliability Paradox: The Configurational Triad Rating Method (CTRM) Procedure for Configurational Personality Assessment

DOI

<https://dx.doi.org/10.17504/protocols.io.14egnr14ml5d/v1>

Ramesh Kumar G S¹

¹Wonderfeelz Neuropsych Meditation Studio

Ramesh Kumar G S

Tech. support email: consultingpsychologist@gmail.com



Ramesh Kumar G S

Consulting Psychologist, UEDP Consulting

Create & collaborate more with a free account

Edit and publish protocols, collaborate in communities, share insights through comments, and track progress with run records.

Create free account

OPEN  ACCESS



DOI: <https://dx.doi.org/10.17504/protocols.io.14egnr14ml5d/v1>

Protocol Citation: Ramesh Kumar G S 2025. A Solution to the Reliability Paradox: The Configurational Triad Rating Method (CTRM) Procedure for Configurational Personality Assessment. **protocols.io**

<https://dx.doi.org/10.17504/protocols.io.14egnr14ml5d/v1>



License: This is an open access protocol distributed under the terms of the **[Creative Commons Attribution License](#)**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Protocol status: Working

We use this protocol and it's working

Created: October 30, 2025

Last Modified: October 31, 2025

Protocol Integer ID: 231203

Keywords: Linear statistics, Configurational assessment, Configurational Triad Rating Method (CTRM), reliability paradox, configurational personality assessment, procedure for configurational personality assessment, novel contextual triad rating method, configurational triad rating method, behavioural intricacies analysis, misrepresent dynamic personality, traditional executive assessment, misrepresent dynamic personality as static noise, based psychometrics, definitive solution to the dynamic assessment paradox, dynamic assessment paradox, reliability, trait, solution to the reliability paradox, latent state, low conventional internal consistency, assessment

Abstract

Traditional executive assessment is plagued by diagnostic failure because linear, element-based psychometrics fundamentally misrepresent dynamic personality as static noise. This "reliability trap"—where instruments designed to be context-sensitive yield low conventional internal consistency—has historically blocked the necessary application of advanced models like Latent State–Trait (LST) analysis. I introduce the novel Contextual Triad Rating Method (CTRM) as the definitive solution to the dynamic assessment paradox. (Context–Situation–Trait (C–S–T) configuration operationalized based on the Behavioural Intricacies Analysis (BIA) framework)

1

1.1 The Contextual Triad Rating Method (CTRM) Framework

The Contextual Triad Rating Method (CTRM) is a powerful statistical framework designed to validate configurational constructs—models where the whole is greater than the sum of its parts, and the individual elements must be distinct yet systematically related. The framework's original application is the Context-Situation Pressure-Trait (C-S-T) triad used in psychological variables, but it is not limited to this specific triad.

Applicability to Non-Psychological Variables

The CTRM can be successfully applied to any field that uses complex, multi-component models that reject the assumption of item redundancy (which is necessary for Cronbach's α). The critical requirement is that the model's elements must be theoretically distinct but must interact coherently to form an emergent construct.

Configurational Structure Field Example Elements (E1,E2,E3,...) Rationale for Configuration

Quadra (E1, E2, E3, E4) Example - Operations Management (Process Efficiency) E1: Task Complexity, E2: Resource Allocation, E3: Team Skill Level, E4: Time Constraint
The quality of an operational outcome depends on the integration of these four independent variables. Ensure Configuration and not mere correlation.

Triad (E1, E2, E3) Example - Ecology (Ecosystem Health) E1: Biodiversity Index, E2: Water Quality, E3: Pollution Load These metrics are distinct but must be assessed as a coherent system to define 'Health.' Ensure Configuration and not mere correlation.

Dyad (E1, E2) Example - Finance (Investment Risk) E1: Market Volatility, E2: Asset Liquidity Risk is an emergent property only when volatility and liquidity are simultaneously considered. Ensure Configuration and not mere correlation.

In all these cases, a configuration (Dyad, Triad, Quadra, etc.) is used when the theoretical model requires that the components be distinct (low elemental α is expected) but coherent (r_1 and r_2 must be high).

Implementation Steps for a Generalized CTRM

To adapt the CTRM for a new configurational model (e.g., a Quadra in Operations Management or the C-S-T Triad in the Contextual Intricacies Analysis Scale (CIAS) for psychological variables), follow these four steps:

Step 1: Define the Configurational Unit and Parallel Sets

- 2 Theoretical Mapping: Clearly define the N distinct elements (E1 through En) that form the complete configuration (e.g., E1=Context, E2=Situation Pressure, E3=Trait).
- 3 Instrument Creation: Develop the instrument, ensuring that the total set of items is split into two or more independent, theoretically parallel sets (Set A and Set B). These sets are essential for calculating the Global Conceptual Reliability (r2). Step 2: Establish Foundational Validity (Expert Rating)
- 4 Recruit a panel of Subject Matter Experts (SMEs) (N approx 30) in the relevant field.
- 5 Task 1: Item Understandability (ICC): Have the SMEs rate the clarity of the items on a Likert scale.
- 6 Task 2: Configurational Distinctiveness ($\bar{x}$) Have the SMEs rate, for each item set, how distinct and non-redundant E1 is from E2, E3, etc. (e.g., "Is E1 conceptually distinct from E2?" 1=No, 5=Yes). Step 3: Collect Data and Calculate Elemental Metrics
- 7 Administer the full instrument to the main sample (N=100+) for the construct being measured.
- 8 Elemental Reliability (The Expected Failure): Calculate Cronbach's α for the elements. A low α is the necessary theoretical success, proving the elements are non-redundant. (e.g., CIAS found α 0.129).

Step 4: Calculate Configurational Reliability Coefficients This is where the unique CTRM metrics are applied to confirm coherence and stability. Coefficient Implementation Step

CIAS Data Example (C-S-T Triad) Contextual Stability Reliability (r1): Intra-Configuration Coherence Calculate the Pearson correlation coefficient (r) among the composite scores of all elements (E1, E2, E3...En) across all items. $r1 = 0.842$ (Correlates C, S-P, and T frames within the triad.)

Global Conceptual Reliability (r2): Cross-Configuration Stability Calculate the Pearson correlation coefficient (r) between the total composite score of Set A and the total

composite score of Set B. $r^2 = 0.811$ (Correlates total score of Triad Set A with Triad Set B.)

Applicable Statistical Metrics and Interpretation The CTRM requires a suite of statistical tests beyond traditional α to justify the configurational approach.

Statistical Metric Purpose CIAS Result (from C-S-T Validation)

Interpretation Cronbach's α Elemental Reliability (Diagnostic Failure). Measures inter-item redundancy. approx 0.129 Low α is expected and desirable. It confirms the elements are conceptually distinct and not reflective indicators of a single factor.

Interclass Correlation (ICC) Item Understandability (Foundational Check).

Measures agreement among expert raters on item clarity. ICC = 0.785

8.1 Strong value validates that the items are clear and consistently interpreted, negating item-wording critiques. **Distinctiveness Score ($\bar{x}$) Configurational Validity.** Mean Likert rating from SMEs confirming E1, E2, E3... are perceived as distinguishable. ($\bar{x}$) = 4.49 (out of 5) Confirms the theoretical non-redundancy of the elements.

8.2 RM-ANOVA **Distinctiveness Test.** Confirms the mean scores of the elements are statistically different from each other. (5, 100) = 2.62, $p = 0.024$ Significant result proves that the elements evoke differentiated responses from the participant sample.

r_1 Intra-Configuration Coherence. Confirms the elements are coherently related within the unit. $r_1 = 0.842$ High value proves the systematic alignment of the configuration.

r_2 Cross-Configuration Stability. Confirms the stability of the total construct across independent item sets. $r_2 = 0.811$ High value proves the global stability and reproducibility of the overall measurement.

Guidelines and Warnings Ethical and Regulatory Compliance Protocols with human subjects (including surveys, expert rating tasks, and data collection from participants) require informed consent prior to use. Before implementing this protocol, users must obtain full approval from their local Institutional Review Board (IRB) or equivalent ethics committee(s).

The CTRM procedure described herein, including expert validation (Phase 1) and participant data collection (Phase 3), must be conducted in strict adherence to all ethical and regulatory guidelines governing human subjects research in the user's jurisdiction.