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## Construct Validity and Internal Consistency of the Quiet Ego, Non-Attachment, and Resilience Scales in Indian Young Adults: A Cross-Sectional Exploratory Factor Analysis

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**Abstract:** Quiet ego, non-attachment, and resilience are increasingly recognised as protective psychological constructs promoting mental health and well-being. These constructs draw on both Western positive psychology and Eastern contemplative traditions, yet their primary measurement tools—the Quiet Ego Scale (QES-14), Non-attachment Scale (NAS-7), and Resilience Scale (RS-14)—have not been psychometrically validated in Indian populations. This study undertakes an initial joint validation using exploratory factor analysis for construct validity, inter-item reliability for internal consistency, and principal component analysis for dimensionality across three scales among 200 healthy Indian university students (50% female;  $M = 20.99 \pm 1.31$  years). All three demonstrated good construct validity and internal consistency. QES-14 largely supported its theorised four-factor structure, though minor weaknesses emerged in the 'Inclusive Identity' dimension, particularly the item on 'connections with strangers,' reflecting potential collectivistic influences. NAS-7 and RS-14 exhibited robust unidimensional structures with excellent reliability, showing minimal and no item-specific deviations, respectively. Mild gender differences appeared on selected NAS-7 and RS-14 items, and while not robust after multiple comparisons correction, these patterns were interpreted through cultural and socialisation perspectives. In sum, the validation of QES-14, NAS-7, and RS-14 in the same cohort highlights both universal and culturally specific dimensions of positive psychological resources. The findings underscore that while these scales broadly capture their intended constructs, item-level anomalies reveal possible emic variations that could warrant adaptation for collectivist contexts.

**Keywords:** Resilience Scale, Quiet Ego Scale, Non-Attachment Scale, Exploratory Factor Analysis, Principal Component Analysis

### 1. Introduction

Indian philosophical traditions such as Hinduism and Buddhism have long provided indigenous frameworks for understanding the self, suffering, and resilience. Constructs like quiet ego, non-attachment, and resilience, though emerging from both Eastern and Western traditions, carry culturally embedded meanings and have gained considerable traction in psychological research, particularly due to their demonstrated influence on mental health and well-being (Goswami, Brahmi, Suresh, *et al.*, 2024). As they gain wider use in psychological research, it becomes important to examine their measurement validity across diverse populations.

Resilience, typically defined as the capacity to recover from adversity (Kadner, 1989), is a key protective factor for mental health, particularly among youth (Samani *et al.*, 2007; Svetina, 2014), and is consistently linked to lower depression, reduced suicidal risk, and enhanced quality of life (Hu *et al.*, 2015; Mirošević *et al.*, 2019; Shilton *et al.*, 2023). Meta-analyses confirm resilience as a robust predictor of mental health across somatic illnesses (Färber & Rosendahl, 2018; Tamura *et al.*, 2021). However, models of resilience are often developed in Western contexts and may not generalise across cultures, highlighting the need for psychometric testing in broader settings. In this regard, the Resilience Scale (RS-14), a widely used 14-item measure, captures self-reliance, purpose, equanimity, perseverance, and existential aloneness (Zelviene *et al.*, 2021). Although originally proposed with a multifactorial



structure, evidence supports its best fit as a unitary scale (Madewell & Ponce-Garcia, 2016; Portzky *et al.*, 2010). The RS-14 shows strong internal consistency and test-retest reliability (Wagnild & Young, 1993), replicated across cultures and languages, making it a strong contender for successful validation in India (Abiola & Udofia, 2011; Nishi *et al.*, 2010; Surzykiewicz *et al.*, 2018; Tian & Hong, 2013; Zelviene *et al.*, 2021).

Non-attachment, the ability to engage with experiences without clinging, is rooted in contemplative traditions and empirically associated with reduced stress, greater adaptability, and improved mental health (Grabovac *et al.*, 2011; Sahdra *et al.*, 2010). Longitudinal and cross-sectional studies link non-attachment to higher well-being, self-actualisation, and lower psychological distress (Ciarrochi *et al.*, 2020; Elphinstone *et al.*, 2020; Whitehead *et al.*, 2021). The Non-Attachment Scale (NAS-7) provides a concise seven-item measure of this construct (Elphinstone *et al.*, 2020; Elphinstone & Whitehead, 2019; Goswami, Brahmi, Jain, *et al.*, 2024; Goswami, Brahmi, Suresh, *et al.*, 2024). Based on Buddhist philosophy, it is a shortened version of the original Non-attachment Scale (Sahdra *et al.*, 2010), which showed satisfactory convergent and discriminant validity. The NAS-7 retains the unidimensional factor structure while being reliable across diverse cultural contexts, and is positively associated with well-being and negatively with traits like neuroticism and materialism (Elphinstone *et al.*, 2020; Sahdra *et al.*, 2010, 2015; Soler *et al.*, 2021). Lastly, quiet ego, emphasising humility, compassion, and mindful self-awareness over egocentrism (Bauer & Wayment, 2008; Liu *et al.*, 2022), is associated with higher psychological flourishing and greater life satisfaction (Bernabei *et al.*, 2024; Liu *et al.*, 2022; Wayment *et al.*, 2016). To assess quiet ego across such contexts, the Quiet Ego Scale (QES-14) integrates principles from positive psychology and contemplative traditions to assess a self-identity balancing personal agency with compassion for others, reflecting a less defensive, more harmonious stance toward oneself and others (Wayment *et al.*, 2015; Wayment & Bauer, 2008). It comprises 14 items across four traits: 'Detached Awareness' (a mindful, non-defensive attention to the present moment allowing for a clear and balanced perception of reality), 'Inclusive Identity' (a sense of connectedness with others and the broader social and natural world), 'Perspective-Taking' (ability to cognitively and emotionally understand others' viewpoints and consider their perspective), and 'Growth and Maturity' (commitment and motivation to personal development and self-improvement over time) (Goswami, Brahmi, Suresh, *et al.*, 2024; Wayment *et al.*, 2015). The scale demonstrates adequate reliability and consistent four-factor structure validation through exploratory and confirmatory factor analyses across primarily Western contexts (Bernabei *et al.*, 2024; Wayment *et al.*, 2015).

Overall, despite their growing relevance, literature related to the QES-14, NAS-7, and RS-14 scales does not adequately address validity within Indian populations. Given the profound cultural, philosophical, and linguistic differences between India and the Western contexts in which these instruments were developed, such an examination is critical. This study primarily aims to assess their construct validity and internal reliability among healthy young Indian adults. In doing so, it contributes to the broader objective of developing culturally informed assessment tools that are both reliable and meaningful within non-Western contexts.

## 2. Materials and Methods

### 2.1. Participants

A total of 200 participants, equally split between males and females, were recruited via purposive and snowball sampling techniques. Participants were required to be Indian residents (95% were from urban areas) between the ages of 18 and 25 (mean = 20.99 ± 1.31 years) with some college-level education. Most of the sample were current undergraduate students or had earned their undergraduate degrees (72% and 18.5% respectively), with the rest either enrolled in or holders of postgraduate degrees. The research was conducted in compliance with ethical standards for human subject research as outlined by the Indian Council of Medical Research (ICMR). Formal ethical approval was obtained from the Institute Ethics Committee at the Indian Institute of Technology Delhi (Proposal P021/P0101).

### 2.2. Instruments

#### 2.2.1. Quiet Ego Scale (QES-14)

The QES-14 presents 14 items divided between 4 subscales: Growth and Maturity (GM), Detached Awareness (DA), Inclusive Identity (II), and Perspective-Taking (PT). Each item is rated on a 5-point Likert scale from 1 (strongly



disagree) to 5 (strongly agree) (Wayment & Bauer, 2008). Some items are reverse-scored (see Table 1), and the score for a subscale is the total score of all items in the subscale. The composite QES-14 score is derived cumulatively from the subscales.

### 2.2.2. Non-Attachment Scale (NAS-7)

The NAS-7 questionnaire is a 7-item Likert-type scale rated from 1 (strongly disagree) to 6 (strongly agree) (Elphinstone *et al.*, 2020; Elphinstone & Whitehead, 2019). None of the items is reverse-scored, and the composite score is the sum ratings of each item.

### 2.2.3. Resilience Scale (RS-14)

The 14-item RS-14 questionnaire requires respondents to rate each item on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). No items are reverse-scored, and the final resilience score is simply the sum of the ratings on each item.

## 2.3. Statistical Analysis

### 2.3.1. Inter-Item Reliability

Inter-item reliability assesses the internal consistency of items within a scale, ensuring they reflect the same underlying construct (Cronbach, 1951; Trochim *et al.*, 2015). It was assessed using Cronbach's  $\alpha$  and McDonald's  $\omega$  (Brahmi, Soni, Ali, *et al.*, 2025). While  $\alpha$  is the most widely reported coefficient, it assumes equal item contributions and uncorrelated error terms, which may not always hold. Therefore,  $\omega$  provides a more robust estimate by accounting for differences in factor loadings. Following standard guidelines, coefficients  $\geq .70$  were considered acceptable and  $\geq .80$  as good (Nunnally & Bernstein, 1994). Reliability estimates were interpreted alongside theoretical coherence and factor structure (Cortina, 1993; Revelle, 2024; Richardson & Machan, 2021).

### 2.3.2. Dimensionality: Principal Component Analysis (PCA)

PCA was used to explore the dimensionality of the QES-14 scale and to evaluate whether item groupings aligned with its hypothesised theoretical structure (DeVellis, 2016; Tabachnick & Fidell, 2013). The QES-14's dimensions were standardised utilising mean-centering-based scoring prior to PCA, which was then compared to its hypothesised four-dimensional structure (Greenacre *et al.*, 2022; Husson *et al.*, 2017; Lê *et al.*, 2008).

### 2.3.3. Item-Level Gender Differences: Robust T-Tests

To assess preliminary measurement invariance across gender, group mean comparisons were conducted (Dabbagh *et al.*, 2023). Multi-group CFA was not feasible due to sample size and model fit requirements (Putnick & Bornstein, 2016). Instead, Yuen's robust t-test, which uses trimmed means to reduce the influence of non-normality and outliers, was employed as a practical alternative (Brahmi, Soni, Sarkar, *et al.*, 2025; Erceg-Hurn & Mirosevich, 2008; Walrus: Robust Statistical Methods, 2022; Yuen, 1974). Tests were performed at the item level for all three scales (Bonferroni-corrected  $\alpha = .001$  for 35 comparisons) and for the four QES-14 sub-dimensions (Bonferroni-corrected  $\alpha = .0125$  for four comparisons).

### 2.3.4. Construct Validity: Exploratory Factor Analysis (EFA)

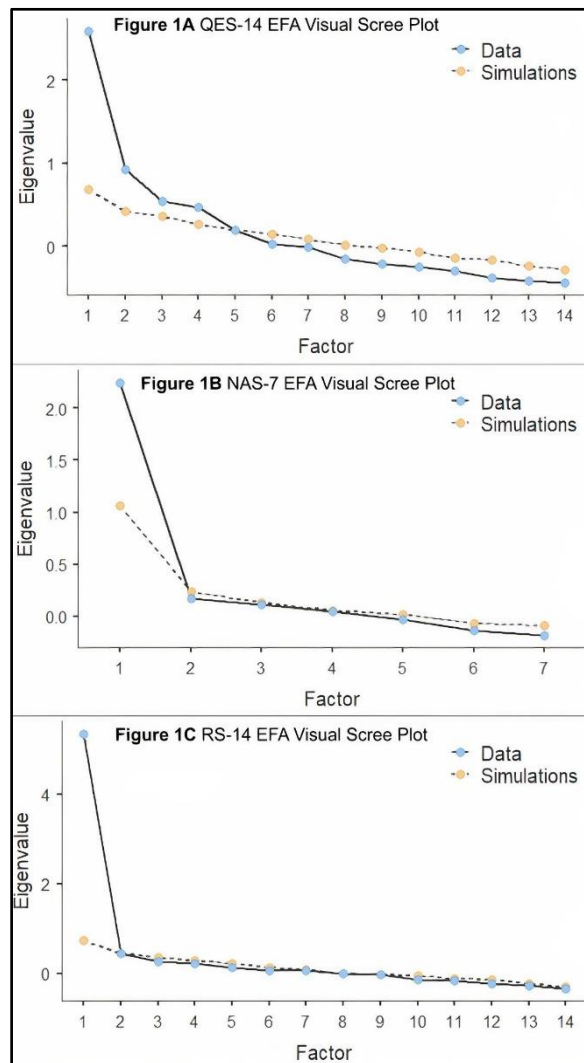
EFA was conducted to assess construct validity as it identifies latent constructs underlying observed variables (Revelle, 2024). EFA is particularly important in adapting questionnaires across diverse populations, where factorial structures may differ (Goretzko *et al.*, 2019; Mulaik, 1987). Although Confirmatory Factor Analysis (CFA) has mostly supplanted EFA, it often struggles with complex, multidimensional scales, compromising model fit, invariance, and discriminant validity (Brahmi, Soni, Ali, *et al.*, 2025; Marsh *et al.*, 2014). CFA's rigid structure—forcing each item to load on a single factor—can bias estimates and inflate inter-factor correlations (Guo *et al.*, 2019; Liang *et al.*, 2020; Xiao *et al.*, 2019). Therefore, for early-stage validation, EFA offers an advantage as it allows cross-loadings, often yielding more theoretically coherent and better-fitting models (Nájera *et al.*, 2023; Sterner *et al.*, 2024). However,



best practices recommend large samples, thoughtful rotation choices (Liang *et al.*, 2020; Sass & Schmitt, 2010), and prioritising theoretical coherence over sole reliance on fit indices (Nájera *et al.*, 2023).

### 2.3.4.1. Assumptions and Sample Size Requisites

The sample (N = 200) met the 10:1 participant-to-item ratio and the recommended range of 100-200 participants (Hair *et al.*, 2016; Norman & Streiner, 2008). Bartlett's test of sphericity confirmed factorability for all questionnaires: QES-14 ( $\chi^2(91) = 564$ ,  $p < .001$ ), NAS-7 ( $\chi^2(21) = 283$ ,  $p < .001$ ), and RS-14 ( $\chi^2(91) = 1271$ ,  $p < .001$ ). Also, the overall Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy exceeded the recommended threshold of 0.5, confirming the data's suitability for factor extraction: QES-14 (.733), NAS-7 (.795), and RS-14 (.801). Factor extraction was performed using Principal Axis Factoring, suitable for non-normal data (Yong & Pearce, 2013). Orthogonal (varimax) rotation was conducted for the unitary NAS-7 and RS-14 scales; similarly, this rotation procedure was also applied to the QES-14, as none of its inter-factor correlations surpassed 0.3 (Jennrich & Sampson, 1966).



**Figure 1.** Exploratory Factor Analysis (EFA) Visual Scree Plots for the Three Psycho-Social Questionnaires. {Each scree plot visualises eigenvalues against factor numbers, illustrating the optimal factor retention based on the eigenvalue drop-off}

**(A)** Quiet Ego Scale (QES-14) EFA Visual Scree Plot, **(B)** Non-attachment Scale (NAS-7) EFA Visual Scree Plot, **(C)** Resilience Scale (RS-14) EFA Visual Scree Plot.

### 2.3.4.2. Factors Retained in Model

The selection of the appropriate number of factors is usually guided by a combination of empirical techniques and theoretical rationale, as recommended by prior research (Dabbagh *et al.*, 2023; Yong & Pearce, 2013). Three



empirical techniques were used: (1) the eigenvalue criterion, which involves retaining components with eigenvalues greater than one (Bahrapour *et al.*, 2024; Kaiser, 1960); (2) the scree plot inspection, where the point at which the slope of the eigenvalues graph flattens i.e. the "elbow" is used to identify meaningful factors (Cattell, 1978; Yong & Pearce, 2013); and (3) parallel analysis, which retains factors whose eigenvalues surpass randomly generated counterparts (Fabrigar & Wegener, 2012). In addition to these empirical methods, the theoretical foundations of the underlying constructs measured by the questionnaires were also taken into account (Brahmi, Soni, Ali, *et al.*, 2025) (see Figure 1).

For the QES-14, although only one factor had an eigenvalue above one, parallel analysis and its four-dimensional theoretical structure supported a four-factor solution (Tucker Lewis Index, TLI = .917; Root Mean Square Error of Approximation, RMSEA = .0457) with substantially better fit over the one-factor model (TLI = .497; RMSEA = .114) (Wayment *et al.*, 2015). Both NAS-7 and RS-14 met all three criteria for a single-factor model, aligning with their theoretical frameworks (Elphinstone *et al.*, 2020; Mirošević *et al.*, 2019).

### 2.3.4.3. Factors' Adequacy

Factor adequacy for the retained models was determined using three criteria: (1) factor loadings above .37 were considered meaningful, (2) theoretical coherence of the retained structure, and (3) internal consistency (McDonald's  $\omega \geq .6$ ) (Norman & Streiner, 2008). Lastly, uniqueness values, which indicate unexplained variance, were analysed to ensure a clear final structure (Brahmi, Soni, Ali, *et al.*, 2025); any loadings that were significant across multiple factors were excluded (Thurstone, 1931).

## 3. Results

### 3.1. Inter-Item Reliability

**Table 1.** Exploratory Factor Analysis (EFA) Factor Loadings for the Four-Factor Model and Inter-Item Reliability Coefficients of the Quiet Ego Scale (QES-14) and its Sub-Dimensions

| <b>QES-14: EFA's Factor Loadings {Salient pattern coefficients <math>\geq .37</math> in boldface}</b>  |  |                 |                 |                 |                 |                   |
|--|--|-----------------|-----------------|-----------------|-----------------|-------------------|
| <b>[All Items' Score<sub>mean</sub> = 3.66 <math>\pm</math> 0.47 (maximum 5); Cronbach's <math>\alpha</math> = 0.734, McDonald's <math>\omega</math> = 0.749]</b>                              |  |                 |                 |                 |                 |                   |
| <b>QES-14 Items</b>  | <b>Item Statements</b>   | <b>Factor 1</b> | <b>Factor 2</b> | <b>Factor 3</b> | <b>Factor 4</b> | <b>Uniqueness</b> |
| <b>Growth &amp; Maturity Subscale Items [Items' Score<sub>mean</sub> = 4.2 <math>\pm</math> 0.66 (max. 5); Cronbach's <math>\alpha</math> = 0.685, McDonald's <math>\omega</math> = 0.698]</b> |  |                 |                 |                 |                 |                   |
| <b>QES1</b>  | I think it is important to have new experiences that challenge how you think about yourself and the world. | <b>0.541</b>    |                 |                 |                 | 0.638             |
| <b>QES5</b>  | For me, life has been a continuous process of learning, changing, and growth.                              | <b>0.502</b>    |                 |                 |                 | 0.615             |
| <b>QES9</b>  | I have the sense that I have developed a lot as a person over time.  | <b>0.663</b>    |                 |                 |                 | 0.516             |
| <b>QES14 (R)</b>   | When I think about it, I haven't really improved much as a person over the years.                          | <b>-0.615</b>   |                 |                 |                 | 0.558             |
| <b>Detached Awareness Subscale Items [Items' Score<sub>mean</sub> = 3.31 <math>\pm</math> 0.89 (max. 5); Cronbach's <math>\alpha</math> = 0.715, McDonald's <math>\omega</math> = 0.724]</b>   |  |                 |                 |                 |                 |                   |
| <b>QES2 (R)</b>  | I find myself doing things without paying much attention.  |                 | <b>0.595</b>    |                 |                 | 0.594             |
| <b>QES6 (R)</b>  | I do jobs or tasks automatically, without being aware of what I'm doing.                                   |                 | <b>0.654</b>    |                 |                 | 0.564             |
| <b>QES10 (R)</b>   | I rush through activities without being really attentive to them.  |                 | <b>0.765</b>    |                 |                 | 0.403             |
| <b>Inclusive Identity Subscale Items [Items' Score<sub>mean</sub> = 3.41 <math>\pm</math> 0.71 (max. 5); Cronbach's <math>\alpha</math> = 0.483, McDonald's <math>\omega</math> = 0.52]</b>    |  |                 |                 |                 |                 |                   |



|   |  |       |  |  |              |       |
|---|--|-------|--|--|--------------|-------|
| <b>QES3</b>   | I feel a connection to all living things.  |       |  |  | <b>0.799</b> | 0.34  |
| <b>QES7</b>   | I feel a connection with strangers.  |       |  |  |              | 0.923 |
| <b>QES12</b>  | I feel a connection to people of other races.  |       |  |  | <b>0.436</b> | 0.74  |
| <b>Perspective-Taking Subscale Items [Items' Score<sub>mean</sub> = 3.58 ± 0.68 (max. 5); Cronbach's α = 0.636, McDonald's ω = 0.642]</b> |  |       |  |  |              |       |
| <b>QES4</b>   | Before criticizing somebody, I try to imagine how I would feel if I were in their place. |       |  |  | <b>0.726</b> | 0.422 |
| <b>QES8</b>   | When I'm upset at someone, I usually try to put myself in his or her shoes for a while.  |       |  |  | <b>0.576</b> | 0.649 |
| <b>QES11 (R)</b>  | I sometimes find it difficult to see things from another person's point of view.         |       |  |  | -0.357       | 0.732 |
| <b>QES13</b>  | I try to look at everybody's side of a disagreement before I make a decision.            | 0.331 |  |  | <b>0.398</b> | 0.687 |

\* The reverse-scored items are indicated with '(R)' next to the item number.

The QES-14 (Table 1) and its subscales showed generally good reliability, though the 'Inclusive Identity (II)' subscale displayed lower consistency ( $\omega = .52$ ). Both the NAS-7 (Table 2) and RS-14 (Table 3) scales showed strong internal consistency.

### 3.2. Construct Validity: Exploratory Factor Analysis (EFA)

**Table 2.** Exploratory Factor Analysis (EFA) Factor Loadings for the One-Factor Model and Inter-Item Reliability Coefficients of the Non-Attachment Scale (NAS-7)

| <b>NAS-7: EFA's Factor Loadings {Salient pattern coefficients <math>\geq .37</math> in boldface}</b>           |  |                 |                   |
|--|--|-----------------|-------------------|
| <b>[All Items' Score<sub>Mean</sub> = 4.03 ± 0.83 (maximum 6); Cronbach's α = 0.734, McDonald's ω = 0.752]</b> |  |                 |                   |
| <b>NAS-7 Items</b>   | <b>Item Statements</b>   | <b>Factor 1</b> | <b>Uniqueness</b> |
| <b>NAS1</b>  | I can let go of regrets and feelings of dissatisfaction about the past.  | 0.345           | 0.881             |
| <b>NAS2</b>  | I can enjoy pleasant experiences without needing them to last forever.   | <b>0.712</b>    | 0.492             |
| <b>NAS3</b>  | I view the problems that enter my life as things/issues to work on rather than reasons for becoming disheartened or demoralized. | <b>0.692</b>    | 0.521             |
| <b>NAS4</b>  | I can enjoy my family and friends without feeling I need to hang on to them.   | <b>0.535</b>    | 0.713             |
| <b>NAS5</b>  | I can take joy in others' achievements without feeling envious.  | 0.36            | 0.871             |
| <b>NAS6</b>  | I do not get "hung up" on wanting an "ideal" or "perfect" life.  | <b>0.403</b>    | 0.837             |
| <b>NAS7</b>  | When pleasant experiences end, I am fine moving on to what comes next.   | <b>0.747</b>    | 0.442             |

The four-factor structure of the QES-14 corresponded closely with its conceptual dimensions (see Table 1). The first and second factors primarily represented 'Growth & Maturity (GM)' and 'Detached Awareness (DA)' subscales, respectively, all with strong loadings. The third factor aligned with the 'Perspective-Taking (PT)' subscale, with mostly strong loadings. However, QES13 showed moderate cross loading on both PT and GM subscales. Lastly, the II subscale's items primarily defined the fourth factor, although QES7 exhibited a high uniqueness value, besides not loading onto the fourth or other factors. Overall, uniqueness values indicated satisfactory levels of explained variance, barring II's QES7 item, which also exhibited problematic loading.

A robust single-factor solution with salient loadings was observed for NAS-7, with all items loading onto the first factor, with the exception of NAS1 and NAS5 (see Table 2), as the latter two had relatively poorer loadings ( $< 0.37$ ). Further, these two alongside NAS6 displayed higher uniqueness values, apart from their slightly weaker



loadings. Thus, suggesting a plausibly smaller shared variance with the main factor for these items. The remaining items demonstrated adequate levels of explained variance.

Lastly, all fourteen items loaded somewhat strongly to the RS-14's one-factor EFA solution (see Table 3). The item RS11 demonstrated a nearly perfect loading (.993) with minimal uniqueness (.014), reflecting a critical core item for the construct. While most items showed moderate uniqueness values, a few, such as RS8, RS10, and RS13, indicated a slightly higher residual variance. Nonetheless, the majority of items displayed acceptable shared variance with the underlying factor.

In summary, a one-factor model was adequate for both NAS-7 and RS-14, while a four-factor model best represented the QES-14. Across scales, item-level anomalies (QES7, NAS1, NAS5) emerged as notable weaknesses, warranting further refinement in future research.

**Table 3.** Exploratory Factor Analysis (EFA) Factor Loadings for the One-Factor Model and Inter-Item Reliability Coefficients of the Resilience Scale (RS-14)

| <b>RS-14: EFA's Factor Loadings {Salient pattern coefficients <math>\geq .37</math> in boldface}</b>  |   |                 |                   |
|---|---|-----------------|-------------------|
| <b>[All Items' Score<sub>Mean</sub> = 5.08 <math>\pm</math> 0.87 (maximum 7); Cronbach's <math>\alpha</math> = 0.878, McDonald's <math>\omega</math> = 0.892]</b> |   |                 |                   |
| <b>RS-14 Items</b>  | <b>Item Statements</b>  | <b>Factor 1</b> | <b>Uniqueness</b> |
| <b>RS1</b>  | I usually manage one way or another.  | <b>0.628</b>    | 0.606             |
| <b>RS2</b>  | I feel proud that I have accomplished things in life.                         | <b>0.558</b>    | 0.689             |
| <b>RS3</b>  | I usually take things in stride.  | <b>0.537</b>    | 0.711             |
| <b>RS4</b>  | I am friends with myself.   | <b>0.509</b>    | 0.741             |
| <b>RS5</b>  | I feel that I can handle many things at a time.                               | <b>0.54</b>     | 0.709             |
| <b>RS6</b>  | I am determined.  | <b>0.745</b>    | 0.445             |
| <b>RS7</b>  | I can get through difficult times because I've experienced difficulty before. | <b>0.661</b>    | 0.563             |
| <b>RS8</b>  | I have self-discipline.   | <b>0.452</b>    | 0.796             |
| <b>RS9</b>  | I keep interested in things.  | <b>0.562</b>    | 0.684             |
| <b>RS10</b>   | I can usually find something to laugh about.                                  | <b>0.49</b>     | 0.76              |
| <b>RS11</b>   | My belief in myself gets me through hard times.                               | <b>0.993</b>    | 0.014             |
| <b>RS12</b>   | In an emergency, I'm someone people can generally rely on.                    | <b>0.594</b>    | 0.648             |
| <b>RS13</b>   | My life has meaning.  | <b>0.474</b>    | 0.775             |
| <b>RS14</b>   | When I'm in a difficult situation, I can usually find my way out of it.       | <b>0.701</b>    | 0.508             |

### 3.3. Item-Level Gender Differences: Robust T-Tests

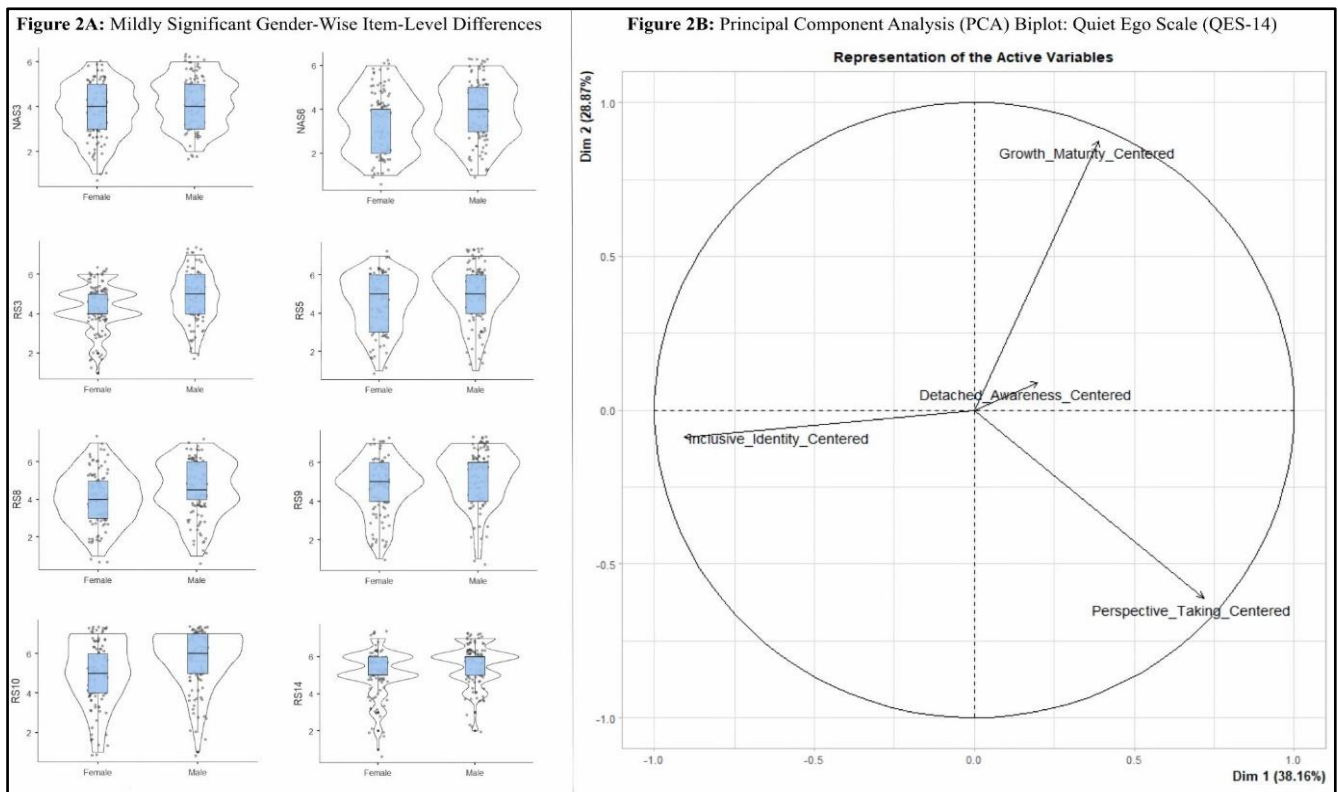
Using Yuen's robust trimmed mean t-tests, mild gender differences were found in two NAS-7 items (NAS3 and NAS6) and six RS-14 items (RS3, RS5, RS8, RS9, RS10, and RS14) (see Table 1 in Appendix). Effect sizes indicated small to moderate differences, and all the item-wise differences reflected higher scores among males (see Figure 2A). However, none of the mildly significant differences survived posteriori Bonferroni corrections. Lastly, no dimensional gender differences were observed for any of the three scales or the four sub-constructs of the QES-14.

### 3.4. QES-14's Dimensionality: Principal Component Analysis (PCA)

PCA towards the QES-14 scale revealed four principal components with eigenvalues greater than 1, explaining 91.7% of the variance. The first component accounted for 38.16% of the variance and was positively correlated with PT ( $r = .717, p < 10^{-32}$ ), GM ( $r = .389, p < 10^{-7}$ ), and DA ( $r = .198, p < 10^{-2}$ ), while negatively correlating with II ( $r = -.907, p < 10^{-75}$ ). The second component, explaining 28.87% of the variance, was positively influenced by GM ( $r = .875, p < 10^{-63}$ ), with a negative correlation to PT ( $r = -.611, p < 10^{-21}$ ). The first two



components captured the dimensional structure of the QES-14, reflecting a distinction amongst PT-GM-II dimensions; however, DA associated weakly (see Figure 2B).



**Figure 2. (A)** Mildly Significant Gender-Wise Item-Level Differences {Note: These were significant ( $p < .05$ ), however, did not survive multiple comparisons' correction}, **(B)** Principal Component Analysis (PCA) Biplot Illustrating the Dimensional Structure of Quiet Ego Scale (QES-14)

Ultimately, across the three instruments, overall reliability and construct validity were strong, though specific item-level weaknesses (QES7, NAS1, NAS5) emerged. These anomalies suggest that while the scales largely captured their intended constructs, certain items may be more context-sensitive or culturally less coherent within the present sample. *Taken together, the findings highlight both the robustness and the limitations of applying these scales within an Indian university sample, providing directions for refinement and cross-cultural validation.*

#### 4. Discussion

This study evaluated the construct validity, dimensional structure, and internal consistency of three contemporary psychosocial self-report questionnaires: the Quiet Ego Scale (QES-14), Non-attachment Scale (NAS-7), and Resilience Scale (RS-14); in a sample of healthy, educated Indian young adults. Examining these scales together offers a novel integrative perspective on constructs that share strong roots in both Western positive psychology and Indian philosophical traditions; and which are rising in importance with increasing focus on culturally-informed psychology (Goswami, Brahmi, Jain, et al., 2024; Sahdra et al., 2010; Singh et al., 2016; Singh & Choubisa, 2010). Prior Indian research has emphasised the importance of resilience, detachment, and prosocial orientations as culturally resonant protective factors (Singh et al., 2016; Singh & Choubisa, 2010), making these scales particularly relevant candidates for validation in this context. At the same time, instruments developed in Western settings may not capture culturally embedded meanings without careful psychometric adaptation, underscoring the need for validation in Indian samples. This speaks to the broader emic-etic debate in cross-cultural psychology: while the scales assume universal (etic) applicability, item-level anomalies may reveal culture-specific (emic) patterns of meaning that must be acknowledged in adaptation (Iliescu et al., 2024). Guided by exploratory factor analysis (EFA) and supported by inter-item reliability indices and item-level gender comparisons, the present findings, therefore,

contribute not only to scale-specific psychometric adaptation but also to the broader effort to build culturally sensitive assessment tools for positive psychological resources.

QES-14 showed good construct validity, structural coherence, and inter-item reliability in the Indian young adult sample with deviations localised primarily to the 'Inclusive Identity (II)' dimension. The II dimension demonstrated a sub-par reliability, but the QES3 ("I feel a connection to all living things") and QES12 ("I feel a connection to people of other races") items loaded strongly and moderately well, respectively. Contrastingly, QES7 ("I feel a connection with strangers") exhibited high uniqueness and failed to load meaningfully onto any of the factors. This might suggest that the experience of inclusive identity in this sample might not fully generalise to all social categories, particularly toward unfamiliar individuals—a culturally plausible outcome in collectivistic contexts that prioritise ingroup connections. Such item-level variability highlights the importance of distinguishing universal (etic) aspects of inclusive identity from culturally specific (emic) expressions. Besides, the PCA results corroborated the distinctiveness of the QES-14 structure, wherein Perspective-Taking, Growth and Maturity, and II emerged as distinct yet interrelated dimensions, while Detached Awareness remained relatively independent, aligning weakly with the first two principal components. Additionally, the QES-14 generally exhibits good gender invariance, with prior studies reporting minimal differences (Bernabei *et al.*, 2024; Wayment *et al.*, 2015). Consistent with this, no significant gender differences were observed at the item, subscale, or scale levels in the present sample.

NAS-7 demonstrated robust unidimensionality and good reliability, with minor item-specific deviations. Although NAS1 ("I can let go of regrets and feelings of dissatisfaction about the past") and NAS5 ("I can take joy in others' achievements without feeling envious") exhibited relatively weaker loadings and higher uniqueness, which may suggest that the ability to relinquish regret or avoid envy could be especially context-dependent. Such deviations highlight how culturally embedded contexts may shape the expression of non-attachment, distinguishing its universal (etic) value from emic variations in how regret and envy are negotiated. However, these deviations were minor and did not substantially undermine the scale's factorial coherence. When considering gender in the present sample, mild item-level gender differences emerged for NAS3 ("I view the problems that enter my life as things/issues to work on rather than reasons for becoming disheartened or demoralized") and NAS6 ("I do not get "hung up" on wanting an "ideal" or "perfect" life"), with males scoring slightly higher. Prior literature consistently demonstrates good gender invariance (Elphinstone *et al.*, 2020; Sahdra *et al.*, 2016). Previously, a large-scale study (N = 7884) indicated an association between NAS-7 and all facets of mindfulness, as measured by the Five-Facet Mindfulness Questionnaire (Sahdra *et al.*, 2016). In this context, formerly, an Indian sample (N = 580) found no gender differences across mindfulness's dimensions, subdimensions, or items (Brahmi, Soni, & Kumar, 2025). However, in the current sample, mild item-level gender differences emerged for NAS3 ("I view the problems that enter my life as things/issues to work on rather than reasons for becoming disheartened or demoralized") and NAS6 ("I do not get "hung up" on wanting an "ideal" or "perfect" life"), with males scoring slightly higher. These may reflect gendered socialisation patterns, where men are encouraged to maintain stoicism and problem-focused coping, while women might internalise perfectionistic or relational expectations. Furthermore, cultural narratives around masculinity in Indian society may valorise acceptance and action over emotional rumination, subtly influencing male endorsement of these items (Eagly & Wood, 1991). Although effect sizes were modest, these differences may reflect marginally greater event acceptance and gratitude resilience among the sample's males, without substantially affecting NAS-7's cross-gender interpretability.

RS-14 exhibited a strong unidimensional structure with excellent reliability. All items loaded meaningfully onto a single factor, with RS11 ("My belief in myself gets me through hard times") showing a nearly perfect loading and minimal uniqueness, underscoring its centrality to the resilience construct. While most items displayed moderate uniqueness values, a few, such as RS8 ("I have self-discipline") and RS10 ("I can usually find something to laugh about"), exhibited slightly higher residual variance, though not enough to undermine overall factorial coherence. This pattern could indicate that resilience as a discipline or optimism may be more variably expressed in the Indian cultural context. These divergences highlight how resilience encompasses both universally salient components (self-belief, perseverance) and culturally variable expressions (discipline, humour), pointing to the importance of distinguishing etic and emic manifestations of resilience. While studies have indicated that the RS-14 can be used across different age groups and socio-emotional levels, with some studies showing partial gender invariance, others have found that it may not be fully gender invariant (Zelviene *et al.*, 2021; Zhao *et al.*, 2022). In the current sample, males scored higher on six items: RS3 ("I usually take things in stride"), RS5 ("I feel that I can handle many things at a time"),



RS8 (“I have self-discipline”), RS9 (“I keep interested in things”), RS10 (“I can usually find something to laugh about”), and RS14 (“When I’m in a difficult situation, I can usually find my way out of it”). This trend may point to socially reinforced beliefs in male resilience and emotional control. Indian males may be more likely to rate themselves highly on traits like perseverance and self-reliance, not necessarily due to actual trait differences, but due to internalised norms about toughness and self-mastery (Eagly & Wood, 1991). However, despite minor to moderate effect sizes, these effects did not survive correction for multiple comparisons and, therefore, are unlikely to affect RS-14 cross-gender interpretability, given the previous literature.

In sum, the validation of the QES-14, NAS-7, and RS-14 in the same sample highlights both shared strengths and culture-specific challenges. All three scales were broadly supported, indicating that these measures capture universally salient constructs. At the same time, the weakest items (QES7, NAS1, NAS5, RS8, RS10) reveal domains where certain facets of inclusive identity, non-attachment, and resilience may be more culturally sensitive, requiring adaptation to local meanings. These item-level anomalies echo the emic–etic debate in cross-cultural psychometrics, where instruments assume universality but may mask culture-specific inflexions (Iliescu *et al.*, 2024). Moreover, the small, inconsistent gender effects observed across NAS-7 and RS-14, but not QES-14, underscore that gendered self-presentation may differentially influence how constructs are expressed across domains. Together, these findings reinforce the value of testing multiple related scales within the same cultural context, as their points of convergence and divergence shed light on how universal constructs are locally inflected.

## 5. Conclusion

The Quiet Ego Scale (QES-14), Non-attachment Scale (NAS-7), and Resilience Scale (RS-14) were validated using exploratory factor analysis (EFA), wherein all three scales demonstrated strong construct validity and inter-item reliability within the Indian young adult sample. While QES-14 largely supported its theorised four-factor structure, minor weaknesses localised to the ‘Inclusive Identity’ dimension particularly regarding connections with strangers suggest culturally plausible ingroup biases, warranting further investigation. Further, NAS-7 and RS-14 confirmed a unidimensional robust factor structure and excellent inter-item reliability, with minimal and no item-specific deviations in the former and latter, respectively.

Beyond scale-specific outcomes, the validation of these three measures together underscores their collective relevance as interrelated psychosocial resources. Resilience, non-attachment, and the quiet ego are increasingly recognised as protective factors (Goswami, Brahmi, Suresh, *et al.*, 2024; Goswami, Brahmi, Jain, *et al.*, 2024). Establishing their validity in an Indian context supports the development of culturally informed interventions, which could range from resilience-building programs in universities to mindfulness-based approaches that incorporate non-attachment, to educational curricula emphasising prosocial and quiet ego orientations. More broadly, this study illustrates the theoretical significance of adapting Western-made scales for non-Western settings, contributing to ongoing debates in cross-cultural psychometrics and positive psychology (Singh *et al.*, 2016; Singh & Choubisa, 2010). By situating emic variations (e.g., reduced salience of connections with strangers, or context-specific expressions of envy and discipline) within broader etic frameworks, the findings highlight both universal and culturally embedded pathways to psychological well-being (Iliescu *et al.*, 2024).

However, given the cross-sectional design using purposive and snowball sampling, and the relatively homogeneous, urban, university-educated composition of the sample, findings—particularly regarding gender differences should be interpreted with caution. The absence of formal measurement invariance testing and confirmatory factor analysis (CFA) limits the ability to verify the stability and generalisability of the factor structures. CFA was not conducted due to the lack of an independent validation sample and the exploratory nature of this early-stage study. Future research should employ larger and more diverse samples, apply exploratory structural equation modelling (ESEM) and/or multi-group CFA, assess test-retest reliability, and further examine measurement invariance to strengthen generalisability and methodological rigour.

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### Authors' Contribution Statemen

Mannu Brahmi: Project Administration, Investigation, Conceptualisation, Methodology, Software, Formal Analysis, Writing-Original Draft, Writing-Review & Editing, Visualisation, Resources, and Data Curation. Harshita Jain: Writing-Original Draft and Writing-Review & Editing. Sutapa Goswami: Data Curation. Dushyant Soni: Writing-Original Draft. Jyoti Kumar: Project Administration. All authors have read and agreed to the published version of the manuscript.

### Consent to Participate

All participants provided informed consent before they participated in the study.



**Ethics Approval**

This research complied with the ethical standards set by the Indian Council of Medical Research (ICMR) and obtained approval from the Institute Ethics Committee at the Indian Institute of Technology, Delhi (P021/P0101).

**ICMJE Statement**

This manuscript adheres to the submission guidelines established by the International Committee of Medical Journal Editors (ICMJE).

**Data Availability**

The research data produced and examined in this study can be obtained from the corresponding author (MB) upon appropriate request.

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**Conflict of Interest**

The authors have no conflicts of interest to declare. There is also no financial interest to report. The author certifies that the submission is original work and is not under review at any other publication.

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